CDTV Creates Dynamic Presence at Winter CES, p71

Amazing COMPUTING™

Your Original AMIGA® Monthly Resource

For The Commodore AMIGA®

Volume 7 No. 3 March 1992
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Graphic Design

Reviews:

- DeluxePaint IV
- Miracle Piano Teaching System
- Scenery Animator
- REAL-3D
- MegAChip 2000/500
- Epson EPL 7500
- MultiStart II
- Video Blender
- Interface Design Kit

In This Issue:

- An Amiga Artist Gallery
- Semi-automatic Painting
- How to photograph your Amiga's screen

PLUS!

Three Hot new features!

- The Video Slot
- cli directory
- Hot Tips

03
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GO FROM MUSICAL MESS TO OVERNIGHT SUCCESS WITH SUPER JAM!

The world of music is yours for a song with SuperJAM!, music software for the tone-deaf and talented alike. Its ability to write music in an unlimited number of styles will open your ears to fresh ideas, exciting rhythms, and mesmerizing feats of all kinds.

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If you own any MIDI-compatible instrument, you can use SuperJAM! to arrange electronic music. And, if you're a BARS&PIPES PROFESSIONAL user, you can seamlessly integrate SuperJAM! directly into BARS&PIPES PROFESSIONAL's screen and use both programs at once!

SuperJAM! comes complete with everything you need to write music including an on-screen piano keyboard that plays complex chords with the touch of a single key. With SuperJAM!'s Editing Grid, you can play your own drum tracks and accompaniments using only the mouse. You can select from dozens of specially designed instruments – such as piano, bass, guitar, and drums – to create your own individual sound, or to imitate songs you know and love.

Use SuperJAM! to create and synchronize soundtracks for animation, video and multi-media presentations. Play along with your favorite tunes or write the next hit song.

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- Over 20 infinitely-changeable musical styles, including rock, pop, dance, classical, samba and jazz
- One-touch chord playing
- SuperJAM! and solo-mode
- Ready-made musical arrangements and chord progressions
- Unlimited amount of chord types including major, minor, sus, 7th, 6th
- Change styles, patterns, rhythms, tempos, keys and chords "on the fly"
- Custom chord design and editing
- Multiple time signatures, instrument types, tempos and styles available within every song
- Graphical song construction and arrangement
- Pattern-style editing and recording
- Graphical section creation and editing
- Full-featured backup band with 6 players
- Solo and lead-line recording
- Snapshot editing and recording
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- TurboSound Technology, with more than four Amiga voices playing simultaneously
- MIDI compatible
- Writes to SMUS and MIDI file format
- Seamless on-screen integration with BARS&PIPES PROFESSIONAL
- Synchronization with leading multi-media applications
- ARexx compatible
- Supports standard BARS&PIPES ARexx commands
- Includes dozens of specially-designed TurboSamples (a $49.95 value!)
- and much, much more!

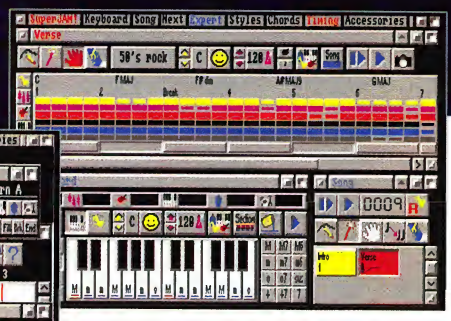
HARDWARE REQUIREMENTS

- Workbench 1.3 or 2.0
- 1 meg of memory
- Amiga 500,1000,2000,2500,3000

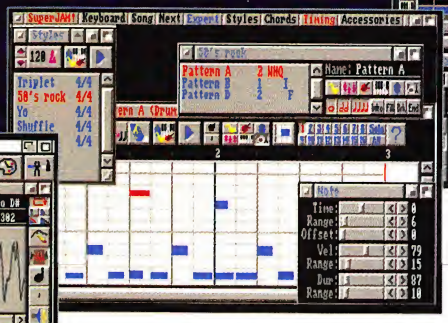
* Results will vary according to your computer's memory and processor speed. A MIDI instrument is recommended but not required. All specifications subject to change. SuperJAM!, TurboSound Technology, BARS&PIPES and BARS&PIPES PROFESSIONAL are trademarks of The Blue Ribbon SoundWorks, Ltd.

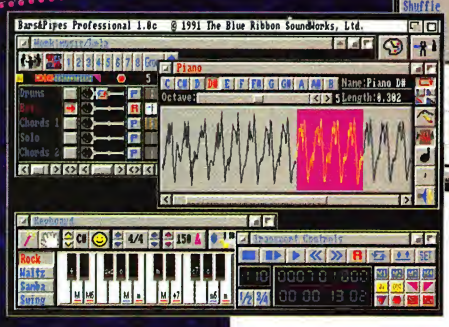
SOUND MINDS FOR MUSIC SOFTWARE

See, hear and touch your music.



Create rhythmic and melodic patterns easily.





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Save lots of time working with desktop publishing, animation, ray tracing and modeling programs...

Speed up all your New Tek Video Toaster™ applications. A perfect match...

Plus, the G-Force 030 Combo plugs into your A2000's CPU slot, leaving all your normal expansions slots open and free for other uses!

G-FORCE 030-50/4 with optional "Hard-Disk-Card" Conversion Kit

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Volume 7
Number 3
March 1992

Screen art by Kevin Lude
Cover photograph by Rick Hess

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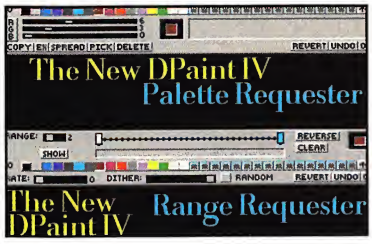

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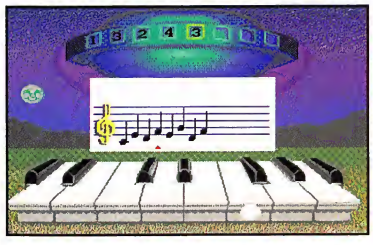

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Scenery Animator
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Real-3D Pro 1.4
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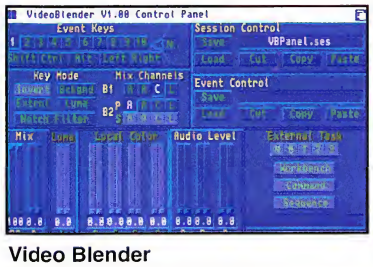

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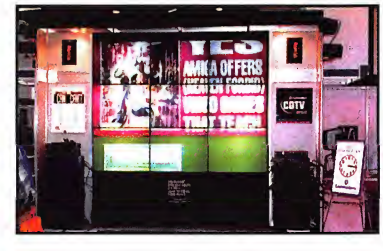

Graphic design, drawing, painting, animation—what used to be done with traditional tools or mainframe computers can now be done efficiently and effectively with an Amiga and a wide choice of available programs.

VideoFonts
from Gold Disk

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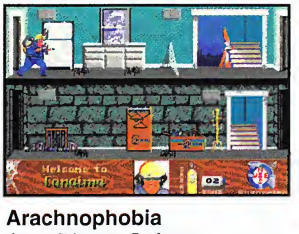

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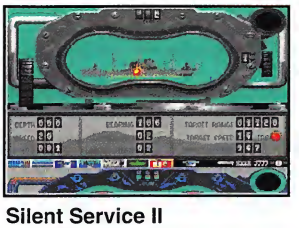

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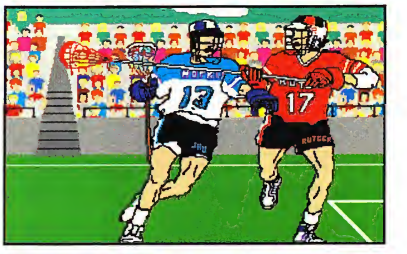

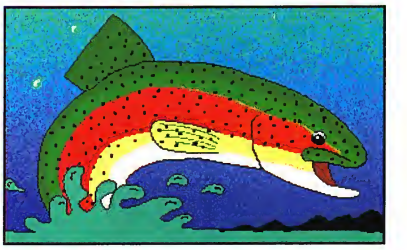

Student artwork from the Germantown Academy of Fort Washington, Pennsylvania.

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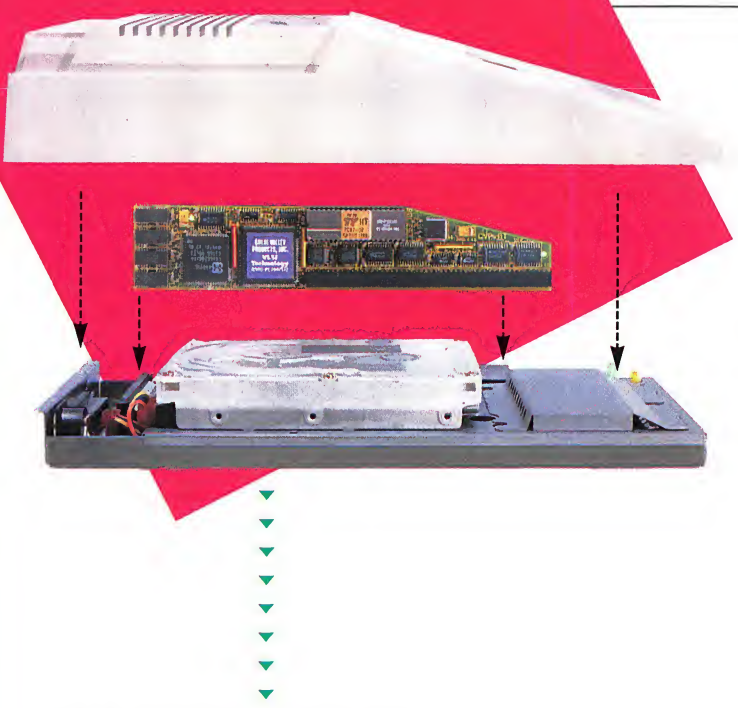

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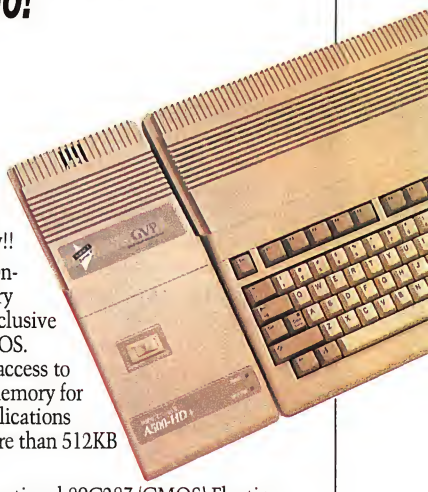

PLUS, your Series II A500-HD8+ matches your Amiga™ 500's good looks line-for-line and curve-for-curve.

So... Be Smart, before you buy anyone else's A500™ hard drive or RAM expansion system, ask the question: "Does It Have a Mini-Slot"? Why settle for anything less?

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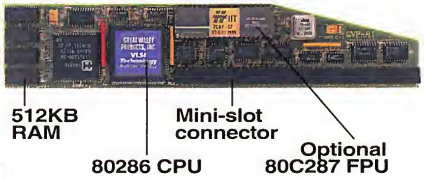

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EDITORIAL CONTENT

Dear AC:

I read the January issue regarding Amiga shows and worldwide attendance. I believe there is more to relatively poor U.S. show patronage than "too many shows," especially when compared to European shows, such as England's. U.S. shows, no matter who conducts them, are usually held on the Coasts or in Chicago and often nearly simultaneously. I have yet to see a show in Dallas or New Orleans, for instance. Also, your magazine stated that there are about 800 K Amigas installed in Britain. Good grief, no wonder they had a huge turnout for the London show! All of Great Britain is smaller than Colorado, and my guess is there are not 800 K Amigas west of the Mississippi.

You still put out the best Amiga magazine in the States and seem by far and away the most reader responsive. Thank you.

Sincerely,
Barlow Soper, Ph.D.
Professor
Ruston, LA

Dear Dr. Soper:

Thank you for your kind words and interest. Your comments are well informed and your arguments are well constructed. Although I disagree with your conclusion, I am in firm agreement with your arguments. How is this possible? I believe we are arguing for the same thing, but in different perspectives. Allow me to explain.

Recently, the local model-train club, Old Colony & Fall River Railroad Museum Inc., held an exposition inviting train dealers, rail fan clubs, and the general public. It was a one day event, held on a Sunday from 10 a.m. to 4 p.m. I had seen a small ad for the event in the local newspaper and decided to hurry down early Sunday morning.

When I arrived at 10:15, three large parking lots were already full. When I entered the gymnasium, I saw a throng of enthusiasts milling about the different tables. There were dealers from around the region selling rolling stock, scenery, kits, etc. It was easy to begin a layout just by shopping those aisles. There were hobby shops, as well as collectors who wanted to sell or trade equipment.

After an hour, I had just been able to make my way through the crowded aisles once and had seen only about half of the things on display. I decided that the best way to enjoy the show was to return when the crowds had died down.

Before I returned,however, I called a few friends to tell them about the show. Then I picked up our advertising manager, Wayne Arruda. There still was no parking close to the show, when we arrived at the event at 1:15, and the crowds, although slightly thinner, were still interested and enthusiastic. We spent an hour and a half reviewing the layouts and the displays, and I spent some hard-earned money on some hard-to-find pieces and used equipment. By then the crowd had diminished so that it was actually possible to talk with the dealers.

As we were leaving, we saw Jeff Gamble, *AC*'s associate editor, arriving. I had decided to take Wayne home, as he had an important basketball game to watch, but I returned to the show. Yes, once back, I bought a few more pieces, but I also saw some things I had not seen before.

In short, my point is, not only had the show excited me and many others, but my enthusiasm had attracted two more people.

Now, you may ask, what does this long-winded explanation have to do with Amiga events? My questions and comments in the January issue were focused on what I believe is necessary in the U.S. Amiga market to put on a successful *national event*. This has nothing to do with local events supporting the Amiga.

Since the editorial ran, I have received two letters: yours and an equally good letter from Mr. Ronald Accardy ("Feedback," p. 79). Although these are the only letters I have received on the matter, they carry a very similar viewpoint. It is a long-standing axiom in publishing that for every letter received there are thousands of other readers who hold the same opinion. I believe your concerns need answers.

A national Amiga event is an event created for developers and Commodore to announce new products, gain interest, and receive maximum press exposure. Companies plan strategies for attending the event. These events are held on either Coast to entertain different segments of the press as well as equalize the transportation costs for exhibiting companies.

U.S. Amiga developers, for the most part, have long ago decided to attend only a few Amiga shows given each year. This is why the events have appeared small. This is also what prompted Amiga developers and Commodore to search for a possible solution because the current show policy was not working. What Commodore has done is to provide a time and a place that every developer can depend on to give them the maximum exposure.

Commodore did not need to look far; they only had to see the growth of MacWorld EXPO, held twice each year on both Coasts since 1985, to see what the right planning can do to improve an event. The first MacWorlds were small, but almost all vendors made it their business to attend. The show grew in size as well as in press coverage. Now a MacWorld can take over San Francisco or Boston, but all developers understand that if they want to be taken seriously, they must attend the event. MacWorld has even announced a third show in the U.S. this year.

The April 24-26 World of Commodore in New York is the first time we have had the same opportunity. It is an opportunity for every Amiga developer to pull together and present his very best products for the Amiga. But this does not mean that other groups cannot demonstrate the capabilities of the Amiga.

Although it will be presented without corporate support from Commodore, AmiEXPO, Inc. is still planning their event in Long Beach from February 14-16. This is what the Amiga is about. It is an independent tool for a group of very independent people. The enthusiasm for the Amiga cannot and should not be confined to just two outlets each year. National Amiga shows are important as a showcase for the Amiga to the rest of the nation, but Amiga enthusiasm should not be confined for those expositions alone.

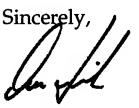
It is also possible for user groups to create Amiga events. These events can include other user groups, Amiga dealers, local developers, and more. It might even be possible to put together seminars and even speeches by Amiga celebrities. Anything that enhances the image of the Amiga and allows its users to gain enjoyment, insight, and interest in this computer should be explored.

It is important to remember that it will not be possible for these events to be supported by every vendor and Commodore. When these shows occur, remind the attendees that it is a local or regional event supported by regional groups. This way everyone wins and, as long as everybody understands what to expect, there will not be the disappointment we have witnessed until now.

The Old Colony exposition brought 1600 people together on a pleasant Sunday in January. Although a collection of people from different backgrounds and interests, they all shared an enthusiasm for trains and enjoyed the opportunity to come together and have fun. No one asked where the major manufacturers were. No one expected 50 or 60 vendors to be present to announce new products. Dealers ran videos, sold products, and met customers. For part of a day, a group of people enjoyed themselves.

How can we make this type of show possible for the thousands of Amiga enthusiasts spread around the U.S. and the other user groups around the world? It will require cooperation and a realistic vision of what should be expected, but it is possible. I will ask all Amiga user groups throughout the world to contact us with their ideas. National shows are important as a showcase for the Amiga to the rest of the nation, but it is the Amiga users who can do the most to entice the public to the benefits of the Amiga.

Sincerely,



Don Hicks
Managing Editor

P.S. Thanks for your comments on the magazine; however, we believe you will soon see Amazing *as not only the best in the States, but also around the globe.*

YOU'LL BUY IMPACT VISION 24 FOR ONE VIDEO NEED AND FIND YOU NEED IT FOR EVERYTHING VIDEO

Introducing the IMPACT VISION 24™ from GVP

The All-In-One Video Peripheral for the A3000 and A2000

If you're into video, IMPACT VISION-24 is truly a dream come true for your A3000 or A2000. It is the first multi-function peripheral specifically designed for the A3000's video expansion slot.
With the optional A2000 genlock slot adaptor kit, it also perfectly complements and enhances the A2000.
Check out these features, all packed on a single Amiga® expansion board!

▶ **Separate Composite and Component Video (RGB+Sync) Genlocks.** RGB genlock operates in the digital domain, for digitally perfect production studio quality mixing: no color bleeding, no ghosting, no artifacts . . .!

▶ **1.5MB Frame Buffer.** Display 24-bit, 16 million color images on your Amiga monitor. On a multi-sync monitor, you can even display 16 million color images in non-interlaced mode!

▶ **Realtime Framegrabber/Digitizer.** Freeze, grab and store (in standard 4096 or 16 million color IFF format) any frame from a "live" incoming RGB video source. Optional "RGB splitter" required to grab incoming composite or S-VHS video.

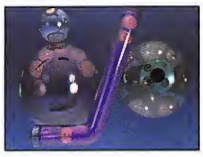
▶ **Flicker-Eliminator.** Duplicates and enhances the A3000's display enhancer circuitry. It even de-interlaces live external video! A must for any A2000 owner. Ask about our A2000 "genlock slot trade-up" program (in case your genlock slot is already used by something less exciting!)

▶ **Simultaneous Component Video (RGB) Out, Composite Video Out and S-VHS Video Out.** Now, anything you can see on your Amiga monitor can be recorded on video tape, including animations, ray-traced 24-bit images and more!

▶ **Picture-In-Picture (PIP) Display.** Freeze, resize, rescale and/or reposition live incoming RGB video just like any workbench window at the double click of a mouse or the pressing of a "hot key". With a multi-sync all this can even be in rock steady de-interlaced mode. Unique "reverse-PIP" feature, even allows you to place a fully functional Amiga workbench (or other application) screen as a SCALE-ABLE (shrunk down!) and re-positionable window over full-screen live video.

▶ To make sure you can take full and immediate advantage of every feature of your new *Impact Vision 24* video-station, we even include the following software with every unit:

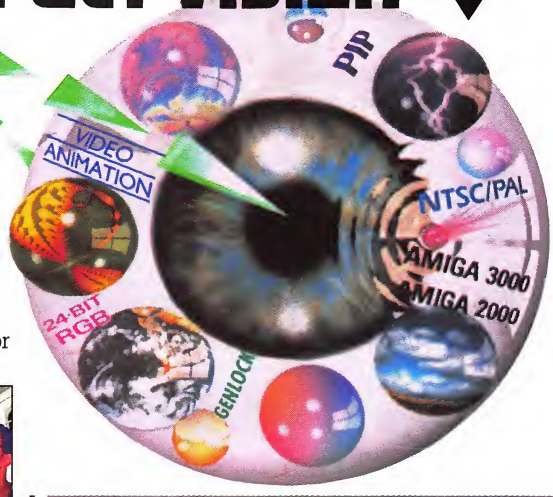
- **Caligari™-IV24.** An exclusive version of the leading broadcast quality, 3-D modelling and rendering program. Use your imagination to model 3D, 16 million color, scenes. Use your digitized video images as textures to wrap around any object! The mind is the limit!
- **SCALA™-Titling.** Easy-to-learn, video titling package complete with lots of special fonts and exciting special transition effects. Turn your Amiga into a character generator.
- **MACROPAINT™-IV24.** A 2D, 16 million color paint program that lets you have fun creating or manipulating any 16 million color, 24-bit image.
- **Control Panel.** Provides full software control over all Impact Vision-24's numerous features. Use your mouse or simply press a (configurable) "hot key" to activate any feature.



At GVP, we wanted to make a major impact on the use of the A3000/2000 by professional video enthusiasts. With the Impact Vision-24 we have!

For more information on how the **Impact Vision 24** can have a major impact on your video productions, call us at **215-337-8770.**

IMPACT VISION 24



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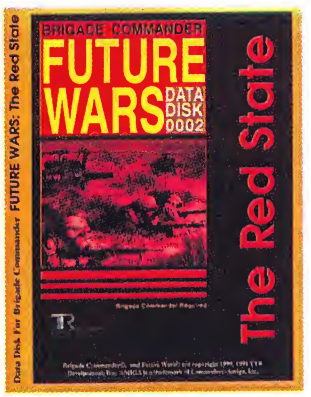


Brigade Commander Data Disk: Future Wars

TTR Development released a new data disk for their game *Brigade Commander*. Future Wars takes place in January 1993. Thousands of tactical nuclear missles were launched across the USA. Following an air strike that crippled the local military, wave after wave of cargo aircraft dropped tons of infantry and equipment. Known as the Red State forces, they moved swiftly and utilized all of the exisiting U.S. equipment along the way.

The remaining Commanders have consulted with you on the current situation. Take command and mount a small assault in the north woods of Minnesota. Move on and try to regain the U.S.A. from the Red State forces. *Suggested retail price: $29.95, TTR Development, Inc., 6701 Seybold Rd., Madison, WI 53719, (608) 277-8071, Inquiry #215*

Contact

Contact, "the phonebook at your fingertips," provides quick and easy access to your address database. It's memory-resident and can be configured to appear on the screen with the touch of a hot key. Other features include direct address insertion, phone dialing, label printing, an ARexx interface, a calculator, and more. *Suggested retail price: $59.95, Consultron, 11280 Parkview, Plymouth, MI 48170, (313) 459-7271, Inquiry #216*

CrossPC & CrossDOS 5.0 Plus

CrossPC is a software PC-XT emulator that runs many popular PC programs while multitasking with Amiga software. CrossDOS 5.0 Plus is bundled with Cross PC. It has been enhanced to support the new 1.44MB high density disks and the new 20MB floptical disks. It also has improved support utilities, error recovery, and user interfaces.

CrossPC will emulate a PC-XT entirely in software—there is no additional hardware to buy. It emulates CGA or monochrome and regards the parallel, serial, and mouse ports as PC devices. It will run on any Amiga with 1MB or more of RAM using AmigaDOS 1.3 or 2.0. It also requires MS-DOS version 3.0 or higher. *Suggested retail price: $59.95, Consultron, 11280 Parkview, Plymouth, MI 48170, (313) 459-7271, Inquiry #217*

Darkman

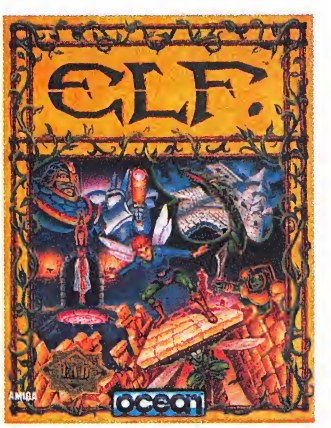
Once he had a normal life, a beautiful girlfriend, and a brilliant medical career. Then he was brutally attacked and burned beyond recognition by a few sadistic criminals. Now, he's out to avenge evil and those who tried to destroy him.

Centered around the plot of the movie, this arcade-combat game incorporates six levels of beat 'em up action. Each level features a specific mission from punching and kicking your way through Chinatown to creating bombs to destroy the laboratory. *Suggested retail price: $39.95, (Ocean) Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA 94404, (415) 571-7171, Inquiry #218*

ELF

You don't have to be big to be a hero. Cornelius, the wood Elf, has lost his girl to the unspeakable Dark Lord, a mad scientist who whiles away the hours in his ghastly, forbidding castle by performing cruel experiments on any woodland creature who comes within his grasp. Help Cornelius track his enemy through six worlds of magic, adventure, and quirky humor.

In each of the six levels, Cornelius is confronted by an array of the strangest creatures imaginable. Don't take too long—Eliza is being lowered into a vat of some disgusting chemical and the Dark Lord is lauging with glee. *Suggested retail price: $49.95, (Ocean) Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA 94404, (415) 571-7171, Inquiry #219*



Fireteam 2200

A tactical wargame set in the 23rd century, Fireteam 2200 offers a wily computer opponent, or two-player mode on one computer or via modem.

Fireteam 2200 offers realistic line-of-sight, over 30 combats units with 25 different weapon systems, and the option to fight alone or command a fireteam of 16 units. A bio-intelligent battle computer has automatic friend or foe recognition and you can datalink to any of your vehicles for first-hand reports. With the push of a button, choose a weapon, target an enemy, and open fire! *Suggested retail price: $49.95, R.A.W. Entertainment, 3027 Marina Bay Drive, Suite 110, League City, TX 77573-2772, (713) 538-3399, Inquiry #220*

Kara Fonts

Kara Computer Graphics have released two new packages of ColorFonts for the Amiga. They can be used for video, business, slides, animations, and desktop publishing.

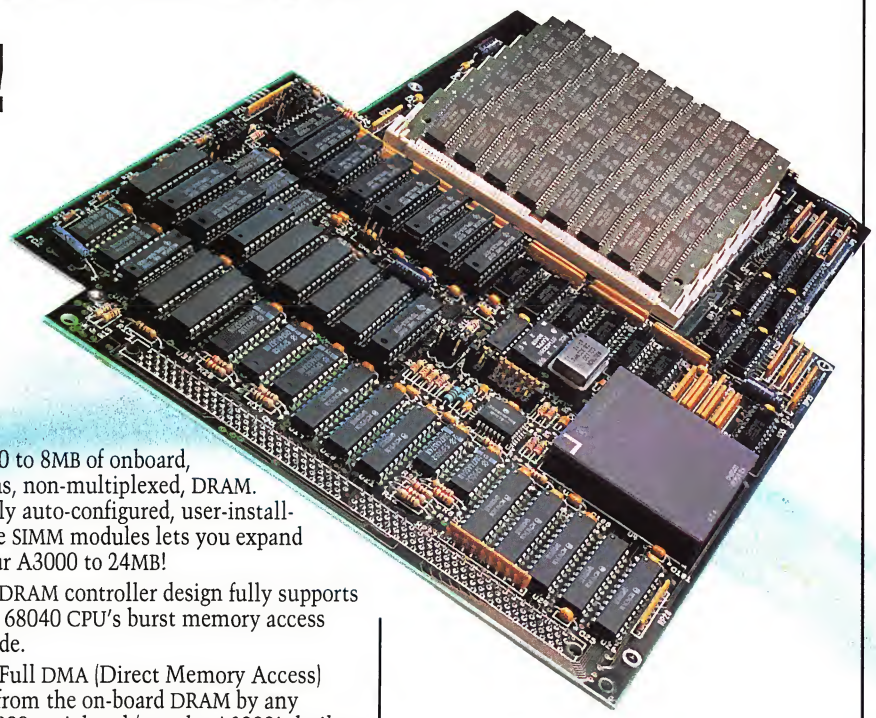
Headlines 3 consists of four fonts from the popular Toaster Font series, converted to the 8-color hi-res ColorFont standard for ColorFont compatible programs on the Amiga. Each of one the typestyles comes in three sizes—76, 100, and 124. The styles are CHROME-serif, GOLD-extrude, GRANITE-chisel, and MARBLE-bevel. Headlines 3 is a four-disk set.

AnimFonts 4 is a new hi-res ColorFont called CHROME-chisel-SCRIPT, which is a shiny gothic script with caps, lower case, numeral, and special characters. AnimFonts 4 is a two-disk set.

Both packages include a hard drive installation program, extra palettes and utilities to use ColorFonts. *Suggested retail price: Headlines 3 $79.95, AnimFonts 4 $59.95, Kara Computer Graphics, 2554 Lincoln Boulevard, Suite 1010, Marina Del Rey, CA 90291, (310) 578-9177, Inquiry #221*

THINK ALL '040 ACCELERATORS ARE THE SAME?

THINK AGAIN!



As a high power Amiga® 3000/3000T user you need a 68040 accelerator board for one reason ... and one reason only ... SPEED!

And once you know what makes one 68040 accelerator better than another, the only board you'll want is the **G-FORCE 040** from GVP.

WATCH OUT FOR SLOW DRAM BOTTLENECKS

Yes, all 68040 CPU's are created equal *but* this doesn't mean that all accelerator boards allow *your* A3000 to make the most of the 68040 CPU's incredible performance.

The A3000 was designed to work with low-cost, 80ns DRAM (memory) technology. As a result, anytime the '040 CPU accesses the A3000 motherboard, memory lots of CPU *wait-states* are introduced and all the reasons you bought your accelerator literally come to a screeching halt!

Not true for the **G-FORCE 040**...

SOLUTION: THE G-FORCE 040's FAST, 40ns, ON BOARD DRAM

To eliminate this memory access bottleneck, we designed a special 1MB, 32-bit wide, non-multiplexed, SIMM module using 40ns DRAMs (yes, *forty nanoseconds!*). This revolutionary memory module allows the **G–FORCE 040** to be populated with up to 8MB of state-of-the-art, high performance, on-board DRAM. Think of this as a giant 8MB cache which lets the '040 CPU race along at the top performance speeds you paid for.

SHOP SMART: COMPARE THESE G-FORCE 040 SPECS TO ANY OTHER '040 ACCELERATOR

▶ 68040 CPU running at 28Mhz providing 22 MIPS and 3.75 MFLOPS!
NOTE: The 68040 incorporates a CPU, MMU, FPU and separate 4KB data and instruction caches on a single chip.

▶ 0 to 8MB of onboard, 40ns, non-multiplexed, DRAM. Fully auto-configured, user-installable SIMM modules lets you expand your A3000 to 24MB!

▶ DRAM controller design fully supports the 68040 CPU's burst memory access mode.

▶ Full DMA (Direct Memory Access) to/from the on-board DRAM by any A3000 peripheral (e.g: the A3000's built-in hard disk controller).

▶ Asynchronous design allows the 68040 to run at clock speeds independent of the A3000 motherboard speed. Allows easy upgrade to 33Mhz 68040 (over 25.3 MIPS!) when available from Motorola.

▶ Hardware support for allowing V2.0 Kickstart ROM to be copied into and mirrored by the high performance on-board DRAM. Its like caching the entire operating system!

▶ Software switchable 68030 "fallback" mode for full backward compatibility with the A3000's native 68030 CPU.

▶ Incorporates GVP's proven quality, experience and leadership in Amiga accelerator products.

TRY A RAM DISK PERFORMANCE TEST AND SEE FOR YOURSELF HOW THE G-FORCE 040 OUT PERFORMS THE COMPETITION

Ask your dealer to run any "RAM disk" performance test and see the **G-FORCE 040**'s amazing powers in action.

So now that you know the facts, order your **G-FORCE 040** today. After all, the *only* reason why you need an '040 accelerator is ***SPEED***!

G-FORCE 040™

Up to 8MB of high speed (40ns) DRAM

Motorola 68040 CPU running at 28 Mhz

A3000 "CPU slot" connector

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Leander

The evil Lord Tyeger has captured Princess Lucanna and is slowly draining her lifeforce to replenish his own dwindling power. Incarcerated in the Sphere of Depletion, Lucanna has very little time before all her strength is drained away. Her only hope of survival is you.

Take on the role of Leander, handsome hero and saviour of princesses. In order to rescue Princess Lucanna, you must travel across three danger-fraught worlds, fighting powerful enemies and using spells, potions, and weapons to aid your mission. Other features include 22 levels, 11 different soundtracks, and a password system. *Suggested retail price: $49.99, Psygnosis, 29 St. Mary's Ct., Brookline, MA 02146, (617) 731-3553, Inquiry #222*

Maple V for AmigaDOS 2.0

Maple V is a completely new version of an interactive computer algebra system used worldwide by mathematicians, engineers, and scientists for teaching, research, and commercial applications.

Maple V delivers 3-D PostScript and IFF output graphics. Maple V's comprehensive mathematics library has been expanded to include over 2,000 functions. Many specialized functions for engineers as well as a new facility for defining and using mathematical operators have been added. It supports the A1000-A3000, and has an ARexx port which supports all Maple V functions. Requires AmigaDOS 2.0, 2MB of RAM and 8MB of free disk space. An academic discount is also offered. Suggested retail price: $450, *Waterloo Maple Software, 160 Columbia Street West, Waterloo, Ontario, Canada, N2L 3L3, (519) 747-2373, Inquiry #223*

MiG-29 Fulcrum

DoMark, a U.K.-based software company, announced their first software release under an exclusive distribution agreement with Accolade. MiG-29 Fulcrum is a combat simulation featuring the Soviet Union's premier flying machine. The keyboard or joystick turns into a cockpit with actual instruments and avionics. Embark on six missions based on real-life scenarios.

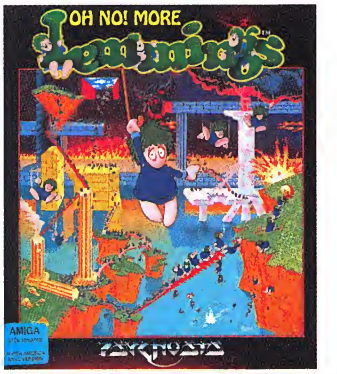
Designed by Simis, a former British Aerospace flight simulator design team, MiG-29 features four different viewing options for a unique perspective on the action. The objective is to be ranked number one above your computer pilot squad mates. Use your weapons, dogfights, attack ground targets, sink ships, destroy hangars, and more.

The game comes with a detailed manual, a quick reference chart, and a four-color poster. *Suggested retail price: $49.95, DoMark, 550 S. Winchester Blvd., San Jose, CA 95128, (408) 246-6607, Inquiry #*

MultiTrace 1.0

Amiga developers using the SAS/C compiler have a new weapon to add to their arsenal of debugging tools. MultiTrace can trace concurrent tasks simultaneously, enabling developers to better utilize the powerful multitasking capabilities of the Amiga.

Display messages and variables in trace windows using *printf* syntax, display hex dumps of memory or string data, locate trace windows on a custom screen, move and resize trace windows, pause and step individual tasks, change the execution speed of a program or task, and do more. It also has a MakeTrace utitlity that creates headerfiles and generates C function prototypes. Suggested retail price: *Suggested retail price: $89, AltoFirma Software, 36M Ridge Road, Greenbelt, MD 20770, (301) 345-2357, Inquiry #225*



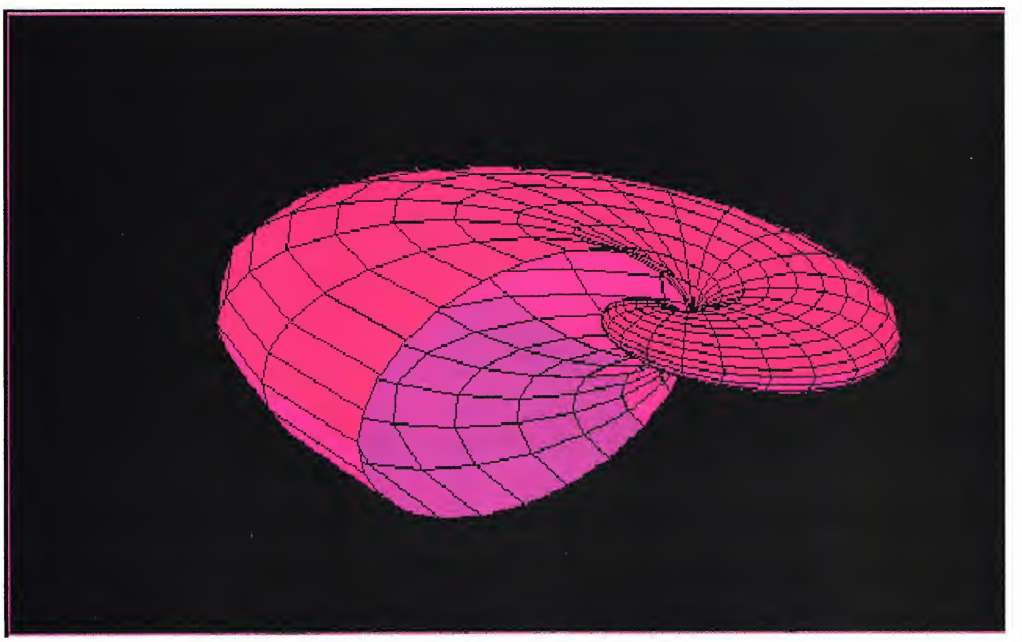
Oh No! More Lemmings

You asked for it! Just when you thought they were finally safe, those green-haired numbskulls have blundered off toward new perils. You'll have to save them again.

Psygnosis is proud to announce two releases of Oh No! More Lemmings. A stand-alone version contains 100 brand new adventures for the mega-hit original game. An add-on version contains the same new adventures, but requires the original Lemmings program. Both versions feature mind-challenging game play and amusing graphics in the Lemmings tradition. *Suggested retail price: $34.99 add-on version, $49.99 stand-alone version, Psygnosis, 29 St. Mary's Ct., Brookline, MA 02146, (617) 731-3553, Inquiry #226*

PowerMonger Data Disk: WWI Edition

Enter the world of 1914. The nations of Europe are locked in a savage war. Mechanized terror weapons have replaced the sword. Leaders now pursue power with rifles, tanks, and airplanes. Command an army through a series of battles and try to overcome the



Maple V for AmigaDOS 2.0

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Only GVP* Factory Installed *A2000 HC8+/52Q, 105Q or 200 SCSI Hard Disk+RAM Boards have a track record this good—over 20,000 satisfied Amiga® users and now a 2-Year *Warranty!

Don't waste your valuable time or money building a SCSI+RAM Controller from parts . . .

Because of our unprecedented pricing structure you can now get GVP's, brand name, *factory installed* A2000 HC8+/52Q, 105Q or 200 at a very competitive price.

▶GVP's A2000 HC8+/52Q, 105Q or 200 —THE SAFEST CHOICE

Look for the GVP Factory Installed Drive Seal . . . it's your assurance that your A2000 HC8+/52Q, 105Q or 200 has been installed and tested in GVP's own factory . . .

And the 2 year limited warranty protects you better *and longer* than any third party installed drive. And with third party drives you run the risk of a run around if anything does go wrong.

▶GVP's A2000 HC8+/52Q, 105Q or 200 —NOW EVEN FASTER WITH FAASTROM™ 4.0

All A2000 HC8+/52Q, 105Q or 200 have been redesigned and equipped with GVP's newest fastest SCSI Driver—**FAASTROM** 4.0. Plus, we've also doubled Western Digital's SCSI Controller clockspeed to 14Mhz—for a tremendous increase in speed . . .

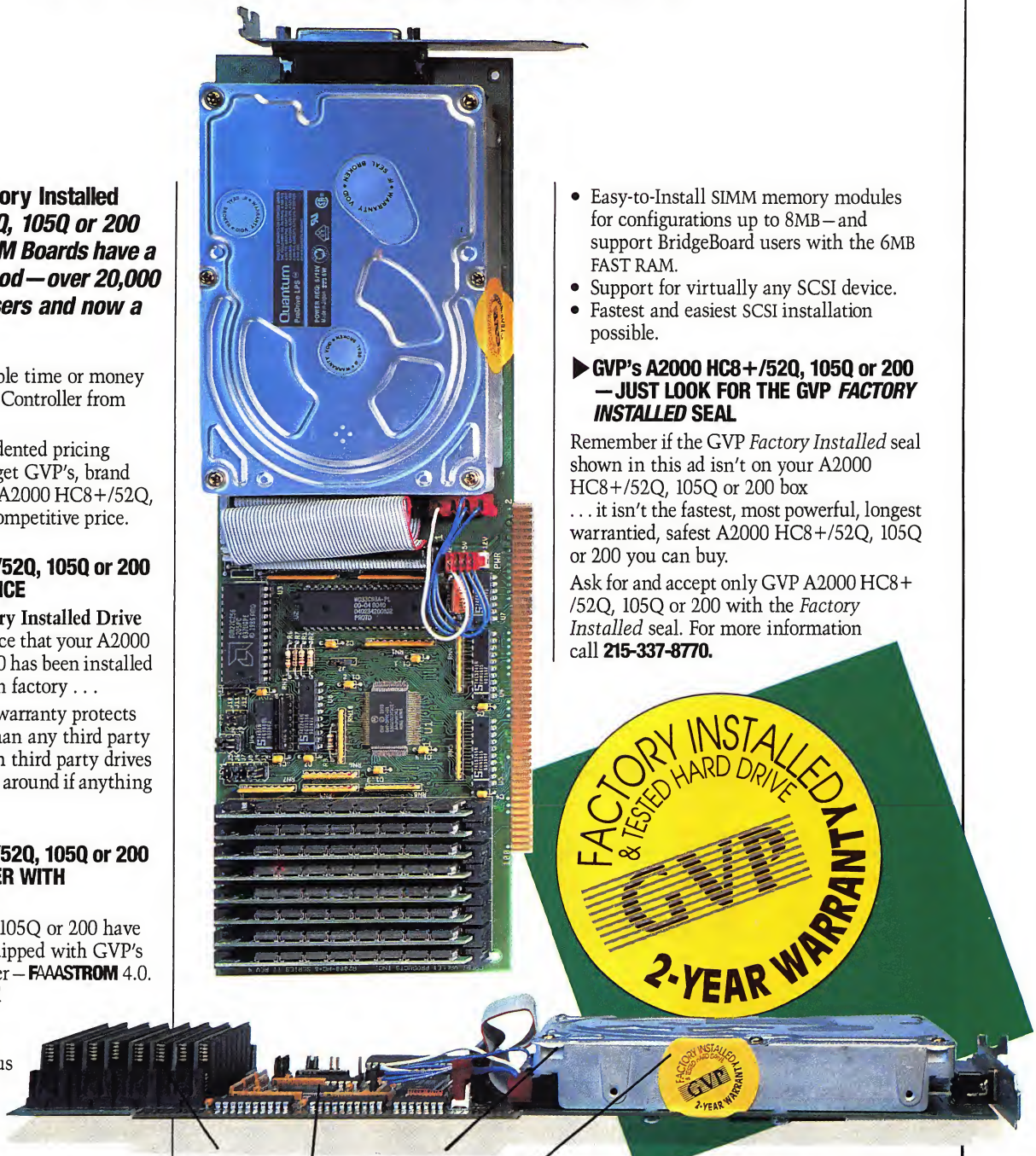
▶GVP's A2000 HC8+/52Q, 105Q or 200 —JUST LOOK AT THESE FEATURES

- Custom chip design for the fastest possible data transfer rates and DMA performance—even in a multi-tasking environment.
- Easy-to-Install SIMM memory modules for configurations up to 8MB—and support BridgeBoard users with the 6MB FAST RAM.
- Support for virtually any SCSI device.
- Fastest and easiest SCSI installation possible.

▶GVP's A2000 HC8+/52Q, 105Q or 200 —JUST LOOK FOR THE GVP *FACTORY INSTALLED* SEAL

Remember if the GVP *Factory Installed* seal shown in this ad isn't on your A2000 HC8+/52Q, 105Q or 200 box . . . it isn't the fastest, most powerful, longest warrantied, safest A2000 HC8+/52Q, 105Q or 200 you can buy.

Ask for and accept only GVP A2000 HC8+/52Q, 105Q or 200 with the *Factory Installed* seal. For more information call **215-337-8770.**



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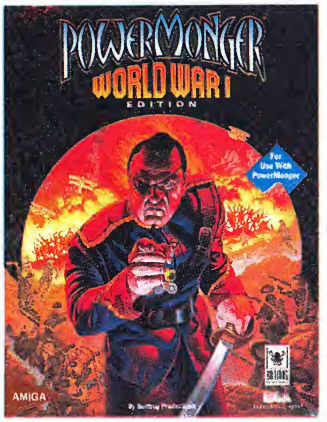
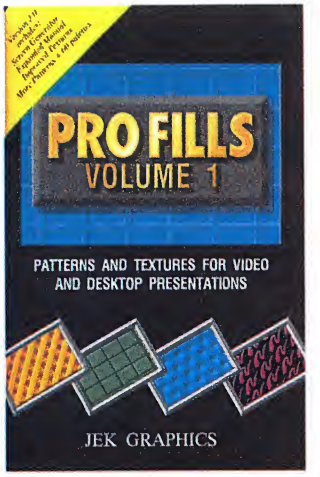
trials of WWI combat.
Factories, medical stations, and dedicated soldiers are at your disposal. Show mercy to defeated enemies and win their allegiance. Explore and conquer over 150 European territories. Requires PowerMonger. *Suggested retail price: unavailable, Electronic Arts,1450 Fashion Island Blvd., San Mateo, CA 94404, (415) 571-7171, Inquiry #227*



Pro Fills Version 2.0

JEK Graphics released Pro Fills Version 2.0, a stand-alone application for creating full-color overscan background screens for use with any Amiga IFF application.
The Screen Generator, which renders any Pro Fills screen in any Amiga resolution in under two seconds, is now included. Developed under AmigaDOS 2.0, Screen Generator has been tested on every configuration of the Amiga.
The Pro Fills manual is three times larger with professional tips, illustrated tutorials, and printed examples of each pattern and texture. Along with 30 additional palettes, several patterns have been added and many of the textures have been improved. *Suggested retail price: $49.95, JEK Graphics, 12103 S. Brookhurst St. E-125, Garden Grove, CA 92642-3065, (714) 530-7603, Inquiry #228*



Quarterback 5.0

Quarterback, the popular hard disk backup utility, has been upgraded. New features include streaming tape backup, compression, new backup and restore options, optional password protection and encryption, Workbench 2.0 support, and full ARexx support. Improved features include increased performace, faster backup to floppy disks, a new user interface, a 3-D appearance, the ability to backup or restore to up to four floppy drives, and increased file selection versatility. Current registered owners will receive an upgrade notice in the mail. *Suggested retail price: $75, Central Coast Software, P.O. Box 164287, Austin, TX 78716, (512) 328-6650, Inquiry #229*

The Ambassador

The Ambassador is a program that improves file transfer capability for both the Bridgeboard and the Amiga. It allows the Bridgeboard to directly access the Amiga-connected floppy drives as MS-DOS drives. There is no need to swap drives any more and partitions can be accessed faster. The Ambassador will run on any Amiga that has a Bridgeboard or SideCar successfully installed. It also requires AmigaDOS 1.3 or 2.0 and Janus 2.0 or higher. *Suggested retail price: $79.95, Consultron, 11280 Parkview, Plymouth, MI 48170, (313) 459-7271, Inquiry #230*

VideoFonts

VideoFonts brings a professional look and feel to all your video productions. Each font is based on AGFA Compugraphics outline technology and was selected especially for video and can be scaled to any size without a loss in quality.
VideoFonts includes an all-new font conversion utility that allows you to scale the fonts to any size you like and create a jaggie-free Amiga font. You can also create Toasterfonts for use with your NewTek Video Toaster.
Create fonts in a variety of styles, with complete control over height and width. Create bold or italic fonts with custom thickness and angles. The preview window shows exactly what your finished font will look like.
VideoFonts includes a utility that makes it possible to create several variations from a single typeface. Other features include variable horizontal and vertical bolding, variable horizontal and vertical aspect ratio, and a variable italics angle. Each package contains three fonts. *Suggested retail price: $99, Gold Disk, 5155 Spectrum Way, Unit 5, Mississauga, Ontario, L4W 5A1, (416) 602-4000, Inquiry #235*

Virtual Reality Studio

One of the first design utilities featuring the dynamics of virtual reality has arrived on North American shores as Virtual Reality Studio. Published by DoMark and distributed by Accolade, this program makes it possible to easily generate an entire 3-D world, then move smoothly from location to location while fully exploring the terrain around you from any angle.
VRS can be used to create games, or for more serious applications such as designing a house, a car, or an airplane. From a small collection of building blocks that can be stretched, shrunk, or rotated in any direction, create basic or complex objects. These objects can then be copied, animated, and colored. A full color palette, including a clear color for invisible effects, is included. Once an environment is created, you manipulate it with a simple control language by applying a set of conditions to the entire world or to specific objects or areas.
VRS comes with an easy-to-understand manual and a video tutorial. *Suggested retail price: $89.95, DoMark, 550 S. Winchester Blvd., San Jose, CA 95128, (408) 246-6607, Inquiry #231*

• Hardware •

80386 20MHz Bridgeboard Enhancer

This new bridgeboard enhancer from ATOP is a small module that replaces the 80286 CPU chip in the Amiga A2286 AT Bridgeboard. No cutting or soldering is required, and it takes only 15 minutes to install. The completed board uses no additional slots and will work with an 80287 math chip, providing a Norton processor speed of about 20.7! *Suggested retail price: $449, ATOP, 11914 Girdled Rd., Painesville, OH 44077, (216) 354-0075, Inquiry #232*

The Miracle Piano Teaching System

The first piano which teaches users how to play it is now available for Amiga users. Miracle, consisting of software, a keyboard, and a cable connection to the computer, is the only interactive system of its kind.
A stand-alone piano keyboard with 49 full-sized keys is included. The keyboard attaches to the Amiga's computer serial port, can produce over 100 different digital sounds, has velocity-sensitive keys, a sustain pedal, and full MIDI support.
The software customizes lessons for the student. Students can progress through more than 1000 lessons at their own pace. It isolates trouble spots in note recognition, rhythm, and fingering. A repertoire of over 100 songs is also included for playing along. *Suggested retail price: $479.95, Software Toolworks, 60 Leveroni Court, Novato, CA 94949, (800) 234-3088, Inquiry #233*

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▶ **Compose** easily using the DSS 4-track sequencer and your Amiga or MIDI keyboard. Draw from up to 31 instruments at a time, in up to four octaves with 8 different variable effects. Mix and modify sounds in real time as you compose, through direct interface with the sound editor.

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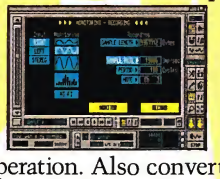
- Analyze graphic equalization of real-time sound.
- Remove "pops" from old phonograph recordings.
- Create custom instruments and sound effects by collecting and/or modifying pre-recorded instruments, voice, or sounds from any source, and use them in your own compositions.
- Save your sound and music to disk or send it out via modem for replay on any Amiga.



Check out these unparalleled features

✓ AmigaDOS 2.0 compatible; written in assembly language.

✓ Multi-tasking operation.

✓ 68020 and 68030 compatible.

✓ Comprehensive tutorial manual helps even beginners get started right away.

✓ Intuition-based graphic interface makes operation easy.

✓ MIDI-in capability.

✓ Direct interface between sequencer and editor.

✓ Hold 31 sound samples in memory at once – all shown on screen so they are easy to manipulate.

✓ Effects and processing capabilities include echo, mix, filter, re-sample, sound data inversion, playing sounds backwards, loops, fade-in/fade-out and more.

✓ Manipulate sound samples in real time, as you listen.

✓ Create sampled instruments with 1, 3 and 5 octaves.

✓ HIFI recording for highest quality playback.

✓ Controls for faster/slower playback and filtering high frequencies during playback.

✓ Load and save samples, songs and instruments in multiple formats.

✓ Multiple effects for each note.

✓ Stereo and monophonic operation. Also convert mono to stereo or separate stereo.

✓ Auto-playing music modules.

✓ Real-time oscilloscope and spectrum analysis.

✓ Real-time reverberation.

✓ Graphic editing of wave forms through easy-to-use functions, including zoom in/out and precision controls for position, frequency and amplitude.

✓ Draw sound waves freehand using the mouse.

✓ Direct editing of individual sample numeric values.

✓ Maximum recording speed of 51,000 samples/second in stereo.

✓ Savable Preference settings.

✓ Saves in IFF, SONIX or RAW formats.

✓ Compatible with SoundTracker, NoiseTracker and SoundFX modules.

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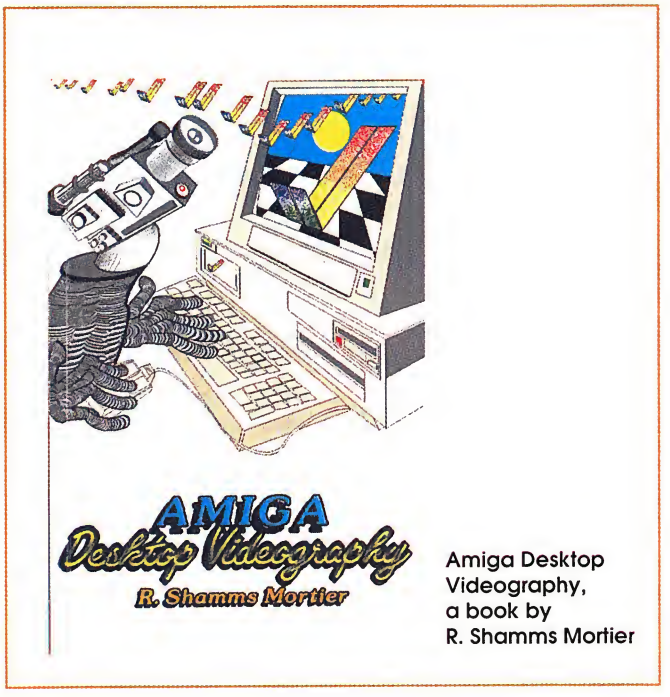


Amiga Desktop Videography, a book by R. Shamms Mortier

• Books •

Amiga Desktop Videography

R. Shamms Mortier, a contributing author for *AC*, has written a comprehensive book on the Amiga computer. The subjects include an overview and history of the Amiga, painting and drawing tools, sound, animation, videographic possibilities, the future of the Amiga, peripherals, and more. The 424-page book also includes a demo disk of VIVA, an authoring system. *Suggested retail price: $39.95, MichTron, Inc.,3201 Drummond Plaza, Newark, DE 19711, (302) 454-7946, Inquiry #234*

• Other Neat Stuff •

Bit Movie 1992

The fifth Bit Movie will take place on April 17-19 at the Palace of Tourism in Riccione, Italy. Bit Movie is a computer graphics show, which also holds a contest for computer animation in real time.

Over 4000 attendees visited the 1991 exhibition. The winning animation for the panel of judges was "The Dating Game," by Eric K. Schwartz (USA), "Glass Fish," Milko Mrsek (Italy), and "Musique," by Pier Tommaso Bennati (Italy).

Bit Movie covers many aspects of computer animation—architectural visualization, industrial application, advertising, logos, TV openings, and more. The show is directed and organized by The Adriatic Coast Amiga Users Club and the municipality of Ricccione. For more information, write to: *Circolo Arci Rataplan, c/o Carlo Mainardi, Via Bologna n. 13, 47036 Riccione, Italy.*

BCS Update correction

In the February 1992 issue of Amazing Computing, the caption in the table of contents should have read: "The October 1991 cover of The Boston Computer Society's BCS Update."

ICD cuts prices

ICD, the Rockford, IL-based manufacturer of Amiga peripherals, has announced lower prices on nearly all of its products for 1992. A few examples of price cuts in the United States are the Flicker Free Video display enhancer for $299.96, the AdSpeed CPU accelerator for $209.96, and the Novia 20i internal hard drive for $244.96. Worldwide prices will be adjusted as well and other new prices are available upon request. Contact: *ICD, Inc., 1220 Rock St., Rockford, IL 61101, (815) 968-2228.*

Phoenix Technologies

The address Phoenix Technologies, makers of the replacement motherboard for the A1000, was not included in last issues show report from Toronto. IT Tech (306) 691-0520 is distributing the board in Canada and The Grapevine Group (800) 292-7445 is the distributor in the U.S. For more information, contact: *Phoenix Technologies, 18 Hampton Rd., Keswick, S. Australia, 5035, (61) 8 293-8814.*

•AC•

New Products and Other Neat Stuff is compiled and edited by Timothy Duarte.

How to get your products listed in New Products and Other Neat Stuff

Send a descriptive press release and two copies of the software or hardware. Please include product name, price, company name, full address, and telephone number. Our mailing address is: PiM Publications, Attn: New Products Editor, P.O. Box 2140, Fall River, MA 02722-2140. For UPS and Federal Express, our address is: PiM Publications, Attn: New Products Editor, 1 Currant Place, Currant Rd., Fall River Industrial Park, Fall River, MA 02720-7160.

ELECTRONIC ARTS'

DeluxePaint IV:

Retrofitting your favorite shoes.

R. Shamms Mortier

If you're like me, you have a favorite pair of old shoes, and no matter what happens, you refuse to throw them out. So, you may take them down to the neighborhood repair person to see if they can be stitched up just one more time. Now, imagine that when you get them back, they look and act like the shoes that Spock wore in *Star Trek V*, shoes that allow you to fly. If you can imagine the wonder and joy you'd feel, wearing something very comfortable that takes you to new heights, then you will get some idea of how *DeluxePaint IV* from Electronic Arts compares to its comfortable parents. It's certain that for most Amigans, EA's DPaint series has all of the cozy attributes of well worn sandals. That's because we know it so well. The toolbox is almost second nature, something we don't have to think much about when we create 2-D images. The feel of DPaint is pretty intuitive by now...so, why would EA want to change it?

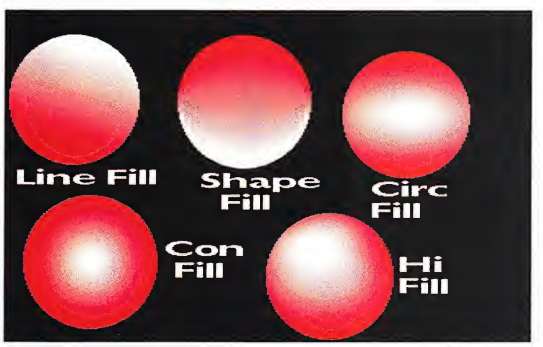


Figure 1: New color fill options.

Well, the answer is in part, because we clamored loud and long for them to do so. The Amiga graphics universe is no longer what it once was, but has become the playing field for 24-bit overscan images and associated paint programs. You have to at least address HAM modes to remain a serious player, and unique tools and toys don't hurt your chances either. Back when many of us purchased DPaint I, the only serious competition was *Aegis Images* (still available for about $40.00 from Oxxi/Aegis). I still remember the creative thrill each new upgrade of the software brought: The first DPaint offered an easy to understand toolbox with all of the standard tools needed to address real electronic painting on the Amiga; DPaint II offered undreamed of perspective modes that added 3D depth to 2D work; DPaint III gave us ANIMbrushes, and allowed me to do a whole series of animations for regional broadcast using just one program, from drawing to animation; and now, in the center ring...DPaint IV!

What's New

By now, most Amigans are familiar with one or another DPaint release. Some folks are even hanging onto their DPaint I disks, afraid that an update will throw them into unfamiliar waters. Well, that may be so, but the "throw" will be a gentle toss, because EA has wisely kept most of the toolbox and the icons the same throughout the four releases. Yes, some things have changed over the years, like those items mentioned and things like true overscan painting. But, by and large, owners of any earlier version of DPaint should update their disks as soon as possible, just to have more challenging creative enjoyment if for no other "professional" reason. Considering that most Amiga people are aware of the standard things an Amiga paint program does (and EA has set and maintained this standard themselves), I am going to focus attention upon the new and wondrous tools that come with the release of DPaint IV. Allow me to list my choices as the most important things that I think DPaint IV adds to your repertoire of creative Amiga alternatives, reasons that you should upgrade to DPaint IV if you have an earlier version of it or reasons you should consider purchasing it for the first time:

Now featuring HAM painting modes, "Light Table", and new Palette and Range options.

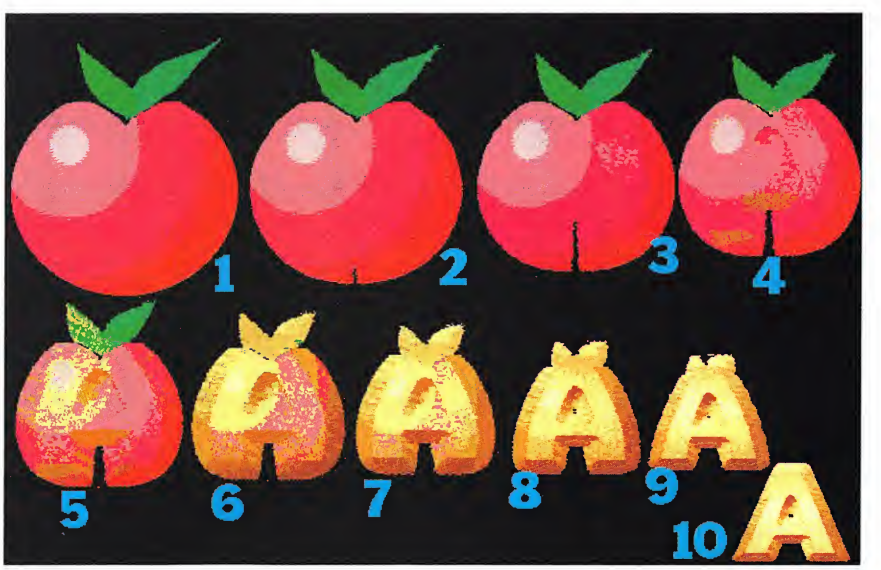


Figure 2: Morphed series of animation frames.

1. The addition of HAM painting modes (in full overscan)
2. The set of new color-fill options
3. The "Metamorph" capabilities
4. The new Palette and Range options
5. The "Lightable"
6. It's capabilities as an editing station for DCTV

To be sure, there are other resident new changes as well, but I consider these to be absolutely primary.

HAM

DPaint IV uses a HAM palette of 256 colors out of the total 4096 colors. Don't feel cheated by this. It's seldom that you use more then these many colors in HAM anyway, and if you need to, you can always port your HAM artwork to NewTek's Digipaint III or Oxxi's SpectraColor, both of which offer all the colors in the HAM rainbow. Then why bother about HAM mode in DPaint anyway, if there is other software capable of more HAM colors? DPaint's 256 color HAM mode is more artifact free then other HAM painting programs. It is always computing the best dither range per scan line, which you can see happening when you move a brush across a HAM DPaint IV color background. This means sharper and less artifacted-fringed images. Besides, DPaint offers all of the familiar tools it has made standard painting options in its HAM mode, including powerful and easy to use fill routines. DPaint is useful as a starting point even when other paint programs are used to give your HAM work final touches, or it can be used a the final touchup option itself. Just try and find the same options for filling a shape or the whole screen in perspective brushes in another paint program. You won't find anything else even close. All of the HAM painting options in DPaint IV work flawlessly.

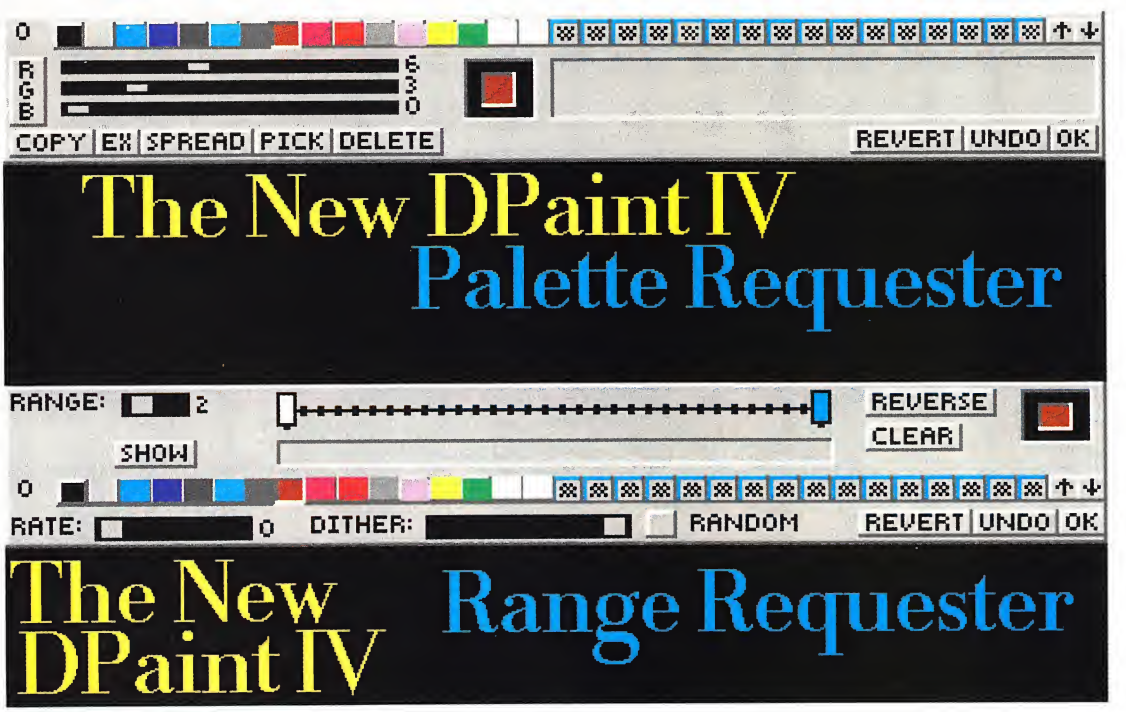
Color-Fill Heaven!

Owners of Dpaint III will recognize only half of the options now present in the "Fill Type" requester, the other five directional choices are brand new. Though these directional dithered fills can be utilized from any Amiga resolution, they really shine in the HAM modes. In addition to the recognizable Horizontal, Vertical, and Horizontal Shape tools are five new selections. The first two are "linear gradients", LINE and SHAP (SHAPe). These allow you to determine the actual direction of a dithered fill in a closed shape, and bring up a user placable directional line so that this is accomplished graphically. Next are the three "radial" gradient tools, CIR(CULAR), CON(TOURS), and HI(LIGHT). These add a crosshair after the directional line so you can determine the lights apparent "hotspot" as well, and it is very important at which point you determine this hotspot is to be placed. They differ as to how the overall shapes are dithered and smoothed out (See Figure #1 for graphic comparisons). If you are in HAM mode, these fills are seamless and exact, if not, the dithering is more apparent between certain colors. There is a new box in the requester that allows you to choose various color ranges that have been preset beforehand. This is how colors in the gradient fill tools are determined.

> Caterpillars to butterflies, tadpoles to frogs, all this is possible with Deluxe Paint IV.

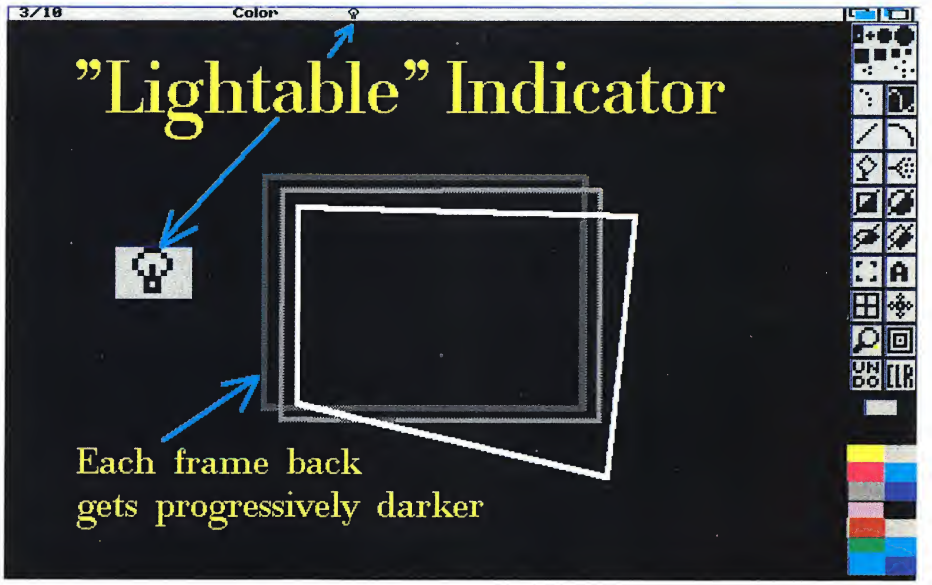
Metamorphing

Caterpillars to butterflies, tadpoles to frogs, Neanderthals to Homo Sapiens, calm friendly faces to Werewolves, all of this and more is possible with DPaint IV. If you love Amiga animation and/or need to access it professionally, then you will absolutely flip for the new Morphing (Metamorphing) capabilities of DPaint IV. "Morphing" means that one shape is changed to another over a series of steps or frames, and DPaint IV allows you to select any two brushes as start and end points of a morph, and creates an ANIMbrush automatically between the two in a user selectable number of frames. This is not the way to create animated figures like running gazelles and such, but a way to transform unlike objects from one to the other. Lettering can be translated into graphics figures, for instance (a great way to develop learning modules for primary readers!), and also a wonderful new tool in the generation of ANIMfonts! If you are working in non-HAM modes, the computer even interpolates what palette col-



New Deluxe Paint IV Palette and Range requesters.

ors might look best in the transitions from one to another. In HAM modes, the same is true, but the color transitions are smoother. The look of a morphed ANIMbrush is likened to an object that achieves a chaotic state before reaching its goal, and it is visually most interesting to behold. See Figure 2 for a sample of what a morphed series of animation frames might contain.



Palettes and Ranges

These requesters are completely new, and they replace the one standard requester that represented them both in DPaint III. When in HAM modes, the palette requester allows you to set colors for sixteen separate and identifiable color ranges, each of which contains sixteen colors. Limiting the number of HAM colors is a tremendous aid in getting a clean HAM output. All of the standard color change tools are here: RGB and HSV sliders, "Copy", and "Exchange". In addition, above the color pots, is an area dedicated to setting specific dithers between colors, each of which has a number "tag" that can be accessed in the Fill requester. Rough results are obtained in non-HAM modes, but HAM painters will notice dithers as smooth as silk. Setting color "ranges" for color cycling and other dithered effects is accomplished in a separate "Range" requester in DPaint IV. Color cycling animations are benefited by the new possibilities in this tool, both in terms of the possible complexities of ranges and their number. Finally—the ability to do controllable color cycling in HAM!

The Light Table

An "In-Between" or "'Tween" drawing is an animation frame that is drawn between one important (keyframe) drawing and another. Sometimes there are dozens of tweens between keyframes. As an animator who has drawn these by hand, I can confess to their tedious and frustrating nature. If the tweens are drawn out of place or too roughly, there is a perceived jump in the playback of the animation. Animators usually draw "pencil tests" of their animations on thin tracing paper or vellum. Each drawing is placed on a table that has a frosted glass cover, under which is a light. These "Light Tables" allow you to see the last frame drawn, so that the next one can be drawn in its proper place. DPaint IV has incorporated the idea of the Light Table in the software, allowing the Amiga animator to drawn Disney style movements from one frame to the next. The operation of the tool is simple. It can be toggled on and off by the keyboard command "l" (lowercase "L"). When in operation, you can advance from one frame to the next, always seeing the preceding one, so that accurate new frames can be designed. This is also a great way to touch up an already existing animation. The best way to utilize this new feature is to work in two color mode, drawing only the outlines of your animation. After saving this to disk as an animation, load it into a full color screen and paint in the frames. This is the way traditional animators work.

DCTV

DPaint IV is probably the best utility tool for Digital Creations DCTV hardware and software, because you can use it to take DCTV single frames and combine them into either whole or segmented animations. I use it extensively with ADSPEC Programming's *Draw-4D Pro* in this manner, and also to preview DCTV animations from other sources. DPaint III did this as well, but refused to load animations larger then the screen size. This restriction is no longer present in DPaint IV, although it will seemingly cut the left and right edges off of an animation larger then the screen in order to be able to play it back.

The Manual as Art!

I believe that you can tell something about a book from the condition and design of its cover, and especially the condition and value of Amiga software from the state of the manual that accompanies it. If care is shown in one area, it most likely designates care in others. Electronic Arts started the Amiga tradition of designing beautiful manuals to accompany the software they released, and nowhere is this made more evident then with DPaint IV. Even the absolute Amiga novice should be able to appreciate the clear tutorials, crisp screen shots (some in full color), and step-by-step caring walk-throughs that the DPaint IV manual bulges with. The manual deserves separate and worthy praise, and should be a model for all other serious Amiga developers.

What I would like to see in DPaint V

DPaint IV is a high class act, and as such, has set the standards that it too must follow in its own future development. My suggestions as to future enhancements are based in part on present need and in part on pure lust. realizing that, here they are:

1. The ability to at least save in 24-bit format. Actually, I'd like to see a DPaint 24-bit painting and animation program as well.
2. The ability to save in DCTV format.
3. A more antialiased circle/ellipse generation in HAM (with results more like NewTek's DigiPaint 3).
4. A "Half Horizontal" and "Half Vertical" capability in the Brush sizing requester.
5. More resizing and modifying capabilities for ANIMbrushes.

These are only suggestions, and in no way effect my feeling that DPaint continues to be the most generally useful software for the Amiga artist and animator. Enjoy! •AC•

Deluxe Paint IV
Price $179.00
Electronics Arts
1450 Fashion Island Blvd.
San Mateo, CA 94404
(415) 571-7171
Inquiry#200

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THE SOFTWARE TOOLWORKS'

Miracle
Piano Teaching System

by Christopher Piper

Introducing an innovative new way to learn piano and keyboard playing without taking lessons!

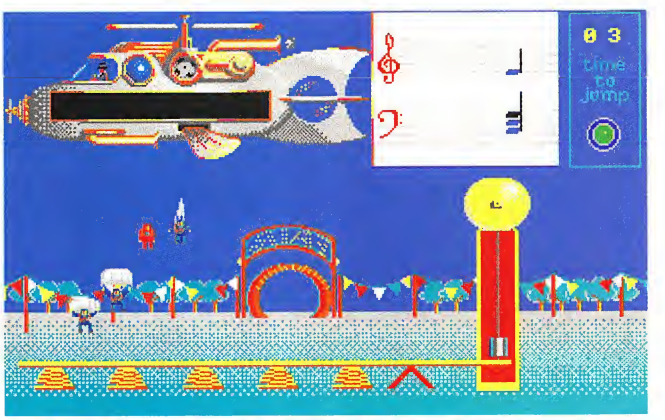
So, I drive up to my favorite Amiga dealership, and there is this big banner in the window..."The Miracle is Here!" It was close to Christmas, but I knew this wasn't an exaltation of the true meaning of the Season, nor had the place gone belly-up and become a religious bookstore. No, the banner touted a device I had been waiting for since I bought my Amiga 500, and Deluxe Music Construction Set, 5 years ago. Or, more truthfully, I had been waiting for it for 30 years.

"The Miracle" is the Miracle Piano Teaching System, a hardware/software/instruction combination that, with your computer, teaches you how to play the piano, at a list price of $479.00. Created by The Software Toolworks, it is advertised on national television as being compatible with Nintendos, PC's, and the Amiga! Not only was the Amiga considered in the development of this product but, to my knowledge, this is the first time a third-party developer has mentioned the Amiga in a television ad.

It should also be mentioned that the software was developed for the Amiga by our friends at Blue Ribbon SoundWorks, Ltd. While the look and feel of the program are very different from the Bars & Pipes line, it is apparent, for reasons I will discuss later, that this program was influenced by people who know and love the Amiga.

The program is laid out like a conservatory of music, with a classroom, practice room, concert hall, recording studio, administration office, and even an arcade game room. When you enter the program, you start at the administration office to log-on, or to register as a new user. You will then be asked if you would like to continue where you left off the last time, or go to the main menu.

An overhead view of the conservatory serves as the main menu. Click on the room you wish to enter, and you are presented with the options for that area. In the concert hall you can choose any of a hundred songs (more available separately) to play, accompanied by a MIDI (Musical Instrument Digital Interface) orchestra. You can also make your own MIDI recording, with up to eight instruments, in the recording studio. Most of your time will be spent in the classroom and practice room, but you will definitely spend a lot of time in the arcade, as well. If you work hard, the Administration Office will print a "Certificate of Merit" for you on any preference-supported printer.



Left: The Miracle welcome screen. Above: "RipChord", a musical game which teaches note and key association.

Like a typing program, the Miracle System sets up a course of study based on the student's ability and progress. Lessons and exercises are tailored to strengthen weaknesses determined as the program "listens" to your playing. Your performance is evaluated, corrections suggested and you are given exercises that will promote those corrections.

Perhaps "exercises" is too strong a word, as it calls to mind something more like work than is actually the case. If you screw up, then you get to play arcade games like "Ducks". This exercise (read game) strengthens your ability to recognize individual notes and

chords on a staff. Ducks travel along the staff and, if you hit the correct piano key, they quack (on pitch), spin and disappear. Otherwise, some nondescript muck splats on the staff where you "aimed."

Another game, "RipChord," features an Air Show in which little parachutists jump when their assigned piano key is struck. Strike all the correct keys simultaneously to form the appropriate chord and their chutes open and they finish the act. Misplace a note and the act falls flat...literally!

These games, and my favorite "Aliens" ("Close Encounters of the Musical Kind"), are lots of fun, but they do not completely take the place of conventional practice. Fortunately, practice is almost as fun as the games. Almost. The sheet music appears right on your Amiga screen. It is highly legible, and takes you through the music in two ways:

Hesitation mode lets you take your time positioning your fingers to form chord and find the melody. Once you have played the proper notes, the curser moves on to the next position. Since you can take your time, the "teacher" is less forgiving of misfingering. If you are sloppy, you will be kept after class to practice;

Metronome mode lays down a beat to which you must play. You are taken through a piece phrase by phrase, slowly at first, until you can play the full score at the proper pace. Small hatch marks over the staff denote each beat, and disappear at the appropriate stroke of the audible metronome. An arrow also marks your current position in the score. The program can recognize phrases in which you have had some difficulty, and will go over the phrase with you until you improve.

Difficulties with rhythm are addressed simply, but effectively, by having you play a single note in time with the beat. Remember, drills are called up as required and, 9 times out of 10, I agreed with the program's decision to send me back to practice some aspect of the lesson. During this process, your progress is tracked and charted, and your records can be perused in the Administration Office. If you have a problem with a term used in a lesson, there is ample assistance via hypertext . Click on a highlighted word, and a detailed explanation is given. Menus have Help Buttons that will further assist you. If only I had gotten this much attention in school!

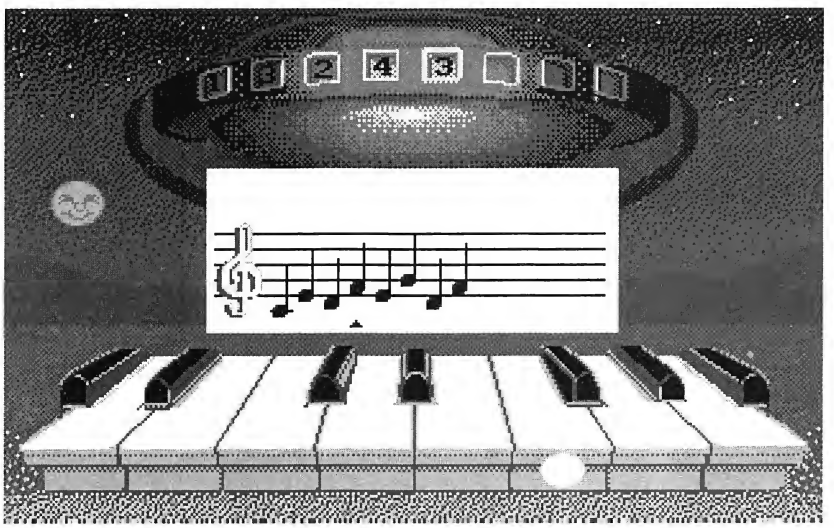
There are two manuals. One addresses the keyboard, selecting patches (sounds), and MIDI technical information. It also has a glossary and presents a very entertaining history of the piano. The other is Amiga- specific and covers connections and using the software. There is also a quick start card that really tells you everything you need to know, in case you have an aversion to manuals. Both manuals are clear, concise, and well- indexed.

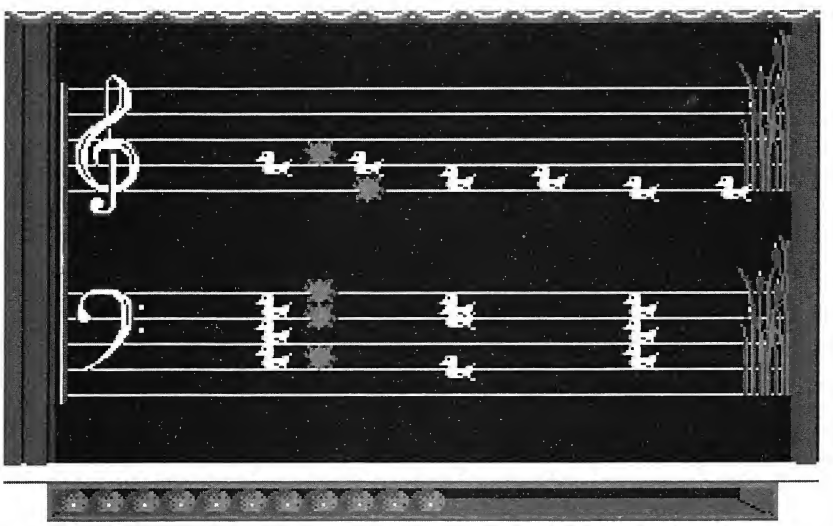
Let me mention a few of the Amiga-specific details. The program requires at least 1MB of memory and Workbench 1.2 or higher, and comes on three disks. I found trying to swap disks, even with two drives, to be mildly annoying. Fortunately, the program is not copy-protected in any way, and easily installed on a hard drive. The program is very solid under Workbench 1.3 and 2.04, and completely multi-tasking. The games operate well, even while under the influence of my Mega-Midget Racer '030 accelerator. There are pop-up menus rather than pull-down menus and some of the required mouse clicks and keystrokes could be improved slightly, but the bottom line is that the program is very intuitive and easy to use.

There is a special cable that connects to your serial port, and you are cautioned not to try to use another serial cable in its place. If, however, you use your serial port for other purposes, say for a modem and a MIDI interface (as I do), then you can forego the cable and connect the keyboard's MIDI ports to your MIDI system.

The keyboard itself is an enigma to me. It is advertised as a professional keyboard, and it does indeed have 49 standard-size, velocity-sensitive keys. It is polyphonic (up to 16 notes at a time), and multi-timbral (8 instruments out of 128), and has 8 MIDI channels. It can be split to play different notes on the left and right halves (divided by middle C). There are two speakers built in.

Then, in the back, there are MIDI IN and MIDI OUT jacks, but no MIDI THRU jack. There is a rinky-dink two pin jack for a foam rubber (!) sustain pedal, leaving me no hope of using my professional Yamaha pedal. Furthermore, rather than using a professional 1/4 inch stereo headphone





Two musical games: "Aliens", left and "Ducks", below, which aide in associating keyboard keys with certain notes.

jack, the system uses a smaller jack for the included "Walkman" type ear inserts. There are two RCA pin jacks to connect to an external sound system, but inserting the earphone plug is the only way to shut off the built-in speakers.

That being said, I must point out that, in the interest of keeping the system as economical as it is, the choice of putting the money in the keys themselves was the right one. The keys are solid, and have a true piano touch. The sound quality is about average for a keyboard in $300-400 price range without an entire teaching system included.

In future versions of the software, I would love to see a less volatile place marker for the lessons, so one could go back and forward in the course without running the risk of having to start a chapter over again because of your reviewing or previewing a lesson. It would be nice if the Jukebox in the Arcade would allow you to select a list of songs to play, rather than being allowed to make only one selection at a time.

I also wish the instruments in accompaniments were editable, perhaps in the Studio. I find some of the instrumentation grating and confusing when confronted by it in a "performance," especially when used in a syncopated rhythm. As it stands, the only recourse is to turn down the Orchestra Volume option in the Administration Office. While we're at it, a patch editor for the re-configuring the keyboard would make life a lot easier.

All of this nit-picking belies the essential question, "Can this system teach someone to play the piano?" The answer is an unqualified "Yes!" The Amiga made it possible for me to share the music that was in my head through extensive editing with a MIDI sequencer. While I am not yet a level at which I can play my own compositions live on the piano, the Miracle has made it possible for me to play one of Mozart's compositions. (Hey, "Twinkle, Twinkle, Little Star" is too Mozart!) I enjoyed playing it, basic as it may be, and I am realizing a dream I have had since I was eight and my parents told me we couldn't afford a piano and lessons.

I envy the six-year-old who sat in front of the Amiga, at my dealer, for one-and-a-half hours and was playing two-handed piano when he left. He had never touched a piano before, but his dad discovered what Santa Claus was going to bring the boy. My dealer's ten-year-old niece had had six- months of piano lessons before the arrival of the Miracle. Now she supplements her regular lessons with practice on a system that catches her errors as they happen, and improves her playing.

Can the Miracle teach someone to be a great pianist? I doubt it. Though this system does exactly what it says it will do, I believe that some human input is necessary for instruction in the finer points of playing an instrument. But, like the poker-playing dog, it's not so much that he plays poker well, but that he plays poker at all. Then again, I'm only on Chapter Four, out of forty, and I'm told the company is coming out with an advanced course. Hmmmm.

•AC•

Required: Workbench 1.2 or higher; Amiga 500 or higher (their phrasing)
Recommended: Extra memory; two floppy drives or a hard drive

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Price: $479.00
The Software Toolworks
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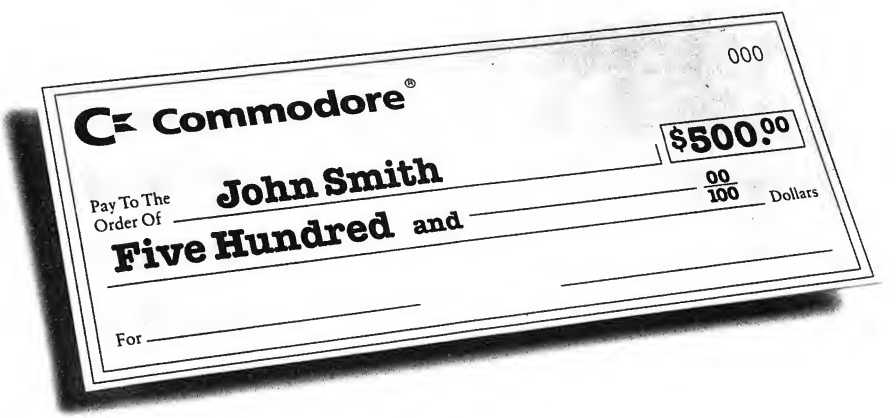

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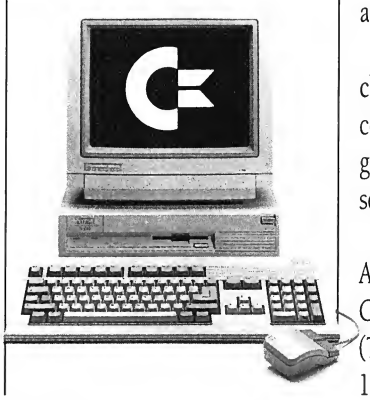

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NATURAL GRAPHIC'S

Scenery Animator

World in Motion

by Frank McMahon

A powerful, easy-to-use scene generating and animating program with great potential.

Fans of *Scene Generator* will be happy to know that the program is back in much more than an update, but a completely new program. *Scenery Animator* from Natural Graphics brings together smooth 3-D landscape animation through keyframe editing. In addition to standard IFF, there is hi-color support which includes IFF 24-bit frame creation for use with such devices as the Firecracker 24 board and the Video Toaster. There is also an option to render complete hi-res DCTV images and animatations from within the program. These and many other variables/options combine to create a feature packed 3-D scene animator—easy enough for beginners yet powerful enough for broadcast output.

Scenery Animator's main interface screen presents you with a graphic representation of your current location. The control panel allows you to move around the area selected.

The main interface screen has several rows of buttons down the left side and below, with a rough graphic representation of your current location on the right. You can scroll around using this preview screen by simply clicking inside of the preview graphic anywhere you want to go. If you want to zoom in, just draw a box within the preview image and in a second your camera has moved. More precise controls are available just below, with options for moving on the X, Y, and Z axis. You can rotate your camera or set it to "Low" which automatically keeps it just above the ground level surface during animated fly-bys. A zoom bar is used for gradual as well as dramatic zooms. The land button allows setting the level for snow, rock, and vegetation. A toggle switch turns soil on and off. Soil appears in areas which have no snow, rock, or vegetation. Vertical exaggeration enables "stretching" the land vertically or flattening it out. Very dramatic effects can be created using various settings.

Scenery Animator creates and animates beautiful landscapes.

Clouds can be generated by random seed. They also can be adjusted via altitude and density. This enables setting the clouds lower than the camera for that "above the clouds" look. Clouds can also be animated via keyframe animation. You can have a static shot of a mountainside while clouds move across the horizon or animate the landscape in addition to the clouds. Light can be set to any direction and any angle rather than the front, back, side, etc. of Scene Generator. Water can be added via oceans or lakes. Lakes are created just by clicking the mouse in low lying areas. Oceans levels are changed by altering the water level. You can always recede the ocean, but you cannot remove a lake you have formed without reloading the original landscape. Waves which reflect the sunlight can be toggled on or off.

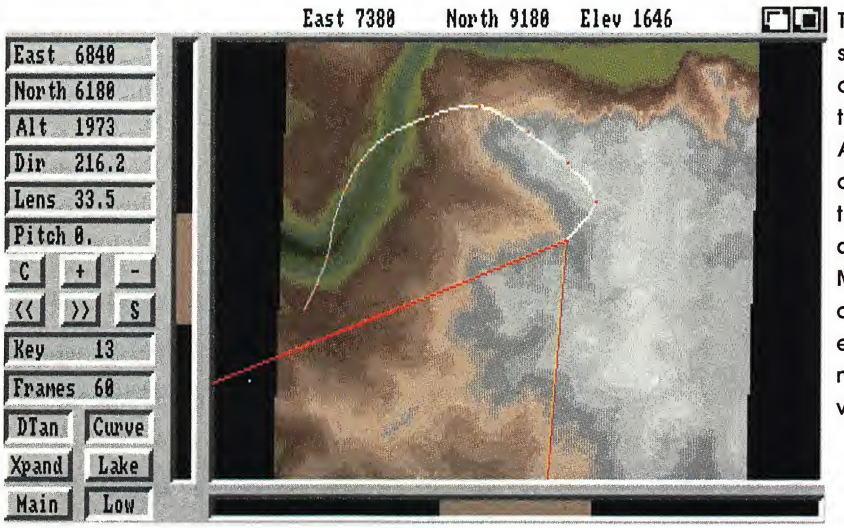
A Dash of Color

Colors for the sky, water, and land in standard Amiga resolutions can be altered after your rendering takes place via a simple 32-color palette requester. A separate screen holds the palette selections for rendering to a frame buffer. Options to change the colors of the sky, snow, rock, vegetation, water, and soil are available with 16 million colors to choose from. Frame buffer dimensions can be typed in manually. Amiga or DCTV dimensions can be set by clicking on standard resolution buttons. DCTV users can select all standard DCTV resolutions and also set the depth to three or four (eight control colors or 16 control colors).

Other options include the ability to "Clip" out sections of your map which will not be rendered for added memory savings. Landscapes can also be appended allowing huge fly-by animations crossing great amounts of terrain. While the included landscapes cannot be appended, Natural Graphics has many data disks available (eight at last count) which can be joined. These disks are low cost and high on variety, featuring everything from Yosemite to Lake Tahoe to Mount St. Helens. Another alternative is to use the random seed fractal generator built in to Scenery Animator for creating new regions. This gives you thousands of varying landscapes, 65,535 to be exact, which can be altered and saved to disk. Creating your own terrain has never been easier!

Flying Above the Clouds

Animation couldn't be simpler. You can create frames either on the main interface screen or on the map screen, which shows a scrollable overhead view of the entire terrain. Options, including camera direction, altitude, lens focal length, pitch, and numerical coordinate locations, are all available using numerical inputs or simple mouse movements. In fact you could get by using the mouse for every part of this program if you don't like typing in requesters. Mouse commands for every option make creating in this program very quick and very easy.



The map screen shows a scrollable overhead view of the entire scene. An abundance of options allow fine-tuning of views and movements. Mouse commands for every option make movement very easy.

After you have decided where your first frame is going to be, you then set your key amount. This amount will tell how many points will go in between each keyframe. A low amount will produce fast motion and a high amount provides smooth movement. After that, just click anywhere on the map to create keyframe points. The program automatically creates the in between frames. Then go to the main screen and see a real-time rough representation of your finished animation. That's it! You can even set the camera so it locks tangent with the path and toggle the Curve button, which automatically creates smooth corners. The power comes in when you change variables such as camera altitude, lens focal length, cloud positions and altitudes, ocean levels, view direction, and more in between keyframes. Truly spectacular results can be achieved through altering settings and having the program smooth out the final effects.

Conclusions

Scenery Animator makes an excellent entry-level introduction to landscape creation/animation because it's mouse-driven format is so easy. But don't be fooled by ease of use; this powerful program creates stunning imagery. There is a detail button that toggles off and on for even greater added detail. Scenery Animator uses Digital Elevation Model data sampled every 30 meters. With detail "on," the resolution is enhanced up to 0.1 meters so you won't see any polygons. Rendering modes include standard IFF, IFF24, DCTV, and PCX, with animation modes featuring IFF ANIM5 and DCTV ANIM5. I've rendered several DCTV animations and the quality is excellent. Because of the hi-res frames of DCTV, a depth of three and a resolution of 640 x 200 with or without overscan is recommended even with a 68030. Color plays a big part in this program, and colors can be altered to create green alien planets, white moons, and just about any other surface imaginable.

The first release of Scenery Animator required the use of an accelerator, 68020, 030, or 040 and a math coprocessor chip. The program would not even boot up if it did not sense the presence of the accelerator. True, a program like this would probably move slow on a stock Amiga, but that hasn't stopped many users from working with other 3-D programs on unaccelerated machines. Fortunately, the latest release, v1.01, which has been available for some time now, does not require an accelerator. Both the 68000 and accelerated versions are included on the program disk. The only not-so-hot point is that, like Scene Generator and similar programs, the burn-out point comes pretty quick. Scenery Animator creates and animates beautiful landscapes, but that's all it does. The random generator and the flow of data disks will keep hard-core fractal fans busy, but others may get bored after a while. The saving grace is its low price that keeps it from being a major commitment.

Other than that, if you are looking for a powerful, easy-to-use scenery program featuring 24-bit output and DCTV animations along with a wealth of features, then Scenery Animator is an excellent choice.

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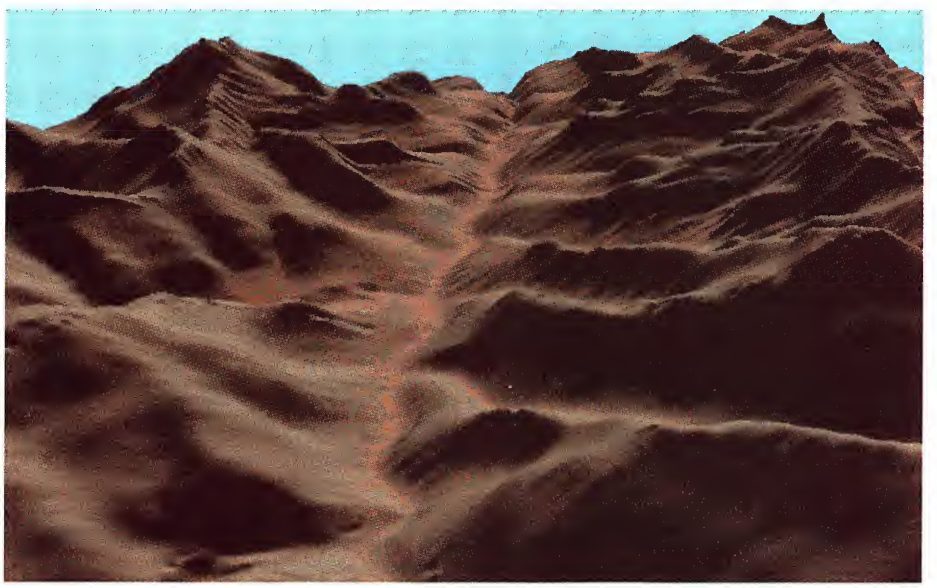

Truly spectacular results can be achieved through altered settings and having the program smooth out the final effects.

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ACTIVA INTERNATIONAL'S REAL-3D Pro 1.4

by R. Shamms Mortier

Figure 1: Your objects can be sculptured, wrapped with an infinite array of textures, and ray traced with cast shadowing in Real 3D 1.4.

Touted as the "best Amiga 3D software in Europe", Activa International's Real-3D has landed on these North American shores. Though the comparative thinness of the manual that accompanies it might hint that the software inside is equally light, just the opposite is true. This is professional 3D software that is as heavy as any of its more well known American competitors, and it also does true ray-tracing, meaning that 3D objects can reflect back the view of their environments and cast shadows upon other objects while in motion. Some of the tools that it contains can be found nowhere else in the Amigaverse. Juha and Vesa Meskanen, the two Finnish mathematician/programming brothers who live in the woods and whose brainchild Real-3D is, spent over four years in bringing this product into reality, and their efforts show in its design. It is also apparent that they were motivated by the look of Sculpt-3D early on, so much so that Sculpt-3D (from Byte-by-Byte) owners familiar with the way that Sculpt works will have little trouble learning to use this new software. To be sure, this is not a clone of any other Amiga software, but the three-view screen design and some other attributes echo an obvious honoring of the earlier Amiga product.

Ray tracing time is always stretched when there are more complicated scenes to render, and I would strongly suggest that the Amiga artist/animator that decides to purchase and use Real-3D (or any other Amiga 3D/4D product) be in possession of an accelerator board and math-coprocessor, preferably a 68030 or 68040 and a 68882 math coprocessor. The Real-3D disk comes with a vanilla program that will run on a standard 68000 machine as well as a turbo version for accelerator owners. But having tested them both, I found that the vanilla version ran four to seven times slower.

The whole premise of Real-3D is that the user will want to create objects that have observable properties that are an almost exact match for real world materials. In addition to and because of that, you can also create some fantasy objects that could never be "constructed" in the non-digital environment, and make them move at the same time. You can even model lens-like objects which bend the objects that they are placed in front of like true lenses do. Moving an almost transparent wine glass in front of another collection of 3D objects can create some startling looks. Real-3D has a collection of four modeling "primitives" that can also be added to your 3D compositions to further enhance the believability of a scene. They are a ball, cylinder, cone, and hyperboloid, and because they are called up as true 3D primitives, they have no apparent polygonal edges or corners, no matter how large you make them. This is great for users wishing to wrap these primitives with textures, or to assign metallic properties to their surfaces. Images can be saved as HAM files, higher resolution grayscale files, or 24bit files (IFF ILBM and Targa are supported, and REAL-3D can display Targa pictures on your Amiga

Figure 2: Real 3D can help you create reflective surfaces that are very believable.

screen by converting them into HAM mode). An animation conversion utility also converts Sculpt files to the Real-3D format.

Boolean Utopia

Boolean operations are those in which whole objects can be set to either "yes" (visible) or "no" (invisible) states. Real-3D uses exquisite Boolean math to allow you to use one object as a "drill" or "chisel" to sculpt another. Allow me to give an example. Suppose you have a sphere and a cylinder. You can pierce the sphere with the cylinder, tag the cylinder as an invisible partner, and...Voila!...you have a sphere with a cylindrical hole through it. But Real-3D's Boolean operations are even more complicated than that. Our cylinder could be shiny and/or of a different color than the sphere. The hole that is drilled in the sphere could take on the very surface attributes as the "drill", also becoming shiny and differently colorized. Boolean operations are called "logical operations" because they take effect in a very specific fashion, and are basically digital (yes/no) in quality. The standard Boolean operations are performed on 3D images in Real-3D, and consist of AND (where you get only the "hole" produced by the intersection of objects), AND NOT (where you get one object minus the intersection and not the other), EOR (where you get both objects but not the surfaces implicated by the intersection), and DIVIDE (dividing the object into to parts, consisting of the acted upon object minus the intersection, and the shape of the intersection itself). The default Boolean operation OR creates either one object or the other with the intersection computed in. See Figure #1 for an example of the creative possibilities of a Boolean digital sculpture. Boolean logic can be used to create very complex shapes, like lenses.

Real-3D contains 24 different ways to bend and twist free-form objects, so that creating more organic looking shapes is made simple. Listing them all would take too much space, but here are a few that I found intriguing in my 3D work: RADIAL modes redirects the bend function away from the targeted bending axis; EXPLODE breaks an object apart into its primitive pieces; SPIRAL creates a user definable spiral surface; four BEND operations (End Point, Global, Local, and Linear) bend an object with different results. There are many more options available. REAL also allows the Amiga user the capacity to "explode" a lathed sculpture into separate elements, a needed operation if you are involved with producing mechanical parts for industrial purposes.

Figure 3: Scenes from a 15-frame animation. Your objects can change direction and size at the same time.

Great Looking Texture Mapping Capabilities

Not only can you wrap any IFF image (including 24bit ones), digitized or painted, around a 3D surface in REAL-3D, but your textures can also be mapped to surfaces in four different projections: Parallel, Cylindrical, Spherical, and Spiral. Each is appreciable in different situations. A soda can, for instance, would have its label wrapped as a cylindrical projection, while a beach ball would look best with the spherical alternative. Flat surfaces would use the parallel mode, while spiral projections offer novel options. See Figure 3 for some comparisons. By selecting "NO 0-COL", the color 0 in the palette of the texture to be wrapped is dropped, allowing the surface of the 3D object to shine through the texture. Another novel approach is to use a texture to cut a surface utilizing a special "CLIP" tool, in which a hollow object's surface not painted by the texture is removed. Very interesting cutaway and mesh surfaces can be created in this manner. By combining UNSHADED and SMOOTH operators with textures, 3D objects can appear as if made from fog and other substances.

Real Tools

Like all other Amiga 3D software, REAL-3D has all of the standard extrusion and lathing capabilities for creating simple and complex 3D surfaces, as well as a lathing option that automatically separates parts of the lathed figure into individual pieces (that can be "exploded" later in an animation). In addition, however, it possesses some tools that no other 3D program, Amiga or otherwise, boasts (at least in this style). One of these is the TUBE tool, allowing you to draw 3D tubular shapes whose volumes are made from spherical, cylindrical, and polygonal primitives. The FENCE tool is useful in designing polygonal surfaces, and generates a chain of zero depth rectangles. You can imagine the outcome of this tool if you can visualize extruding a meandering line. The example of its use in the manual is a computer designed piece of lawn furniture. The POLYHEDRON tool allows the creation of surfaces that are made from polygons.

By far the most unique sculpting tool in Real-3D is the PIXEL tool (which no one else has even thought of!). See Figure 4 for a visual example of its results. In general, the PIXEL tool allows you to replace each pixel in a 2D brush with a 3D object! This is a great alternative for Amiga logo designers who are tired of the same old look. First, you create a 2D text or graphic in a paint program (like EA's DPaint IV), save it, and import it into REAL-3D. Colors are taken into consideration, so that you could use a nice ColorFont in this process. In REAL-3D, the 2D surface is examined, and you can determine what 3D shape (including extruded shapes) are used to replace the pixels. The finished piece looks like a surface made from hooked rugs or marquee lights. There is also a PixelTool2 that can shape landscape areas from IFF luma/chroma data.

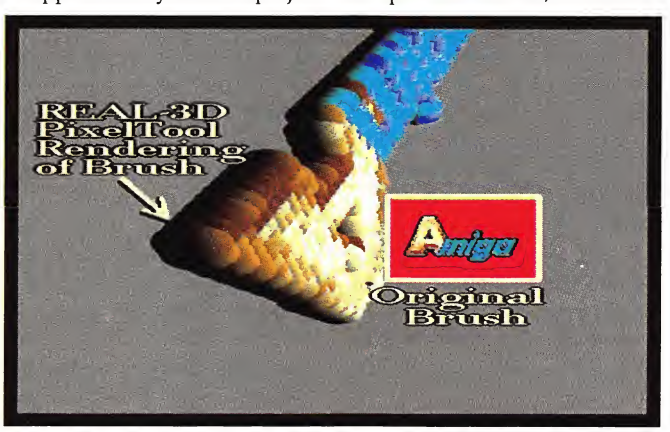

Figure 4: A logo created with Deluxe Paint and rendered with Real 3D's "Pixel" tool. Any 3D shape can be substituted for an imported brush's pixels with this tool.

Rendering

The only other Amiga 3D ray-tracing software that matches the quality of REAL-3D's HAM rendering is Impulse's Imagine. The developers of REAL-3D seemingly have taken great pains to respect this traditional Amiga rendering mode with smoothing algorithms and other trade secrets. The way REAL-3D targets colors to specific objects is unique to the product. A

color requester can be accessed that shows 2, 4, 8, or 16 color registers. Below are RGB sliders that can adjust any of the colors. New color parameters are then attached to selected objects from this limited palette. 24bit renderings are saved directly to a file, so it's best to preview them first in lower resolutions and/or less complex (e.g., non-shadowed) modes to make sure the compositions are what you want. REAL-3D has some wonderful "Bump Mapping" routines and capabilities that make even the animation of watery surfaces possible. Even if you choose no shadowing or ray tracing, REAL 3D can produce images that may be just right for the flatter more cartoony animation look you desire.

Animating

REAL-3D has a separate standard animation interface, as well as a more detailed exposure/de-exposure feature. Wind/Rewind gadgets allow you to move easily to any frame. Aim points determine where the camera is looking in the scene, and wireframe mode allows the user to preview the motions set. It is always best to render frames to RAM (if you have a good chunk of it left) or to a hard disk, as animations are seldom of the size that will fit on a floppy. REAL-3D adds a numeric indicator to all of the frames saved (01, 02, 03,..etc.). "Orbits" can be tied to an object in any view, and the objects set in orbital motion along a created path. Objects can also rotate as they move on a path. Curved orbits can move objects in several planes at once. The direction of objects on a path can be specified.

"Exposing" an object means that its motion has been set in an animation. Objects not exposed are motionless, and acting on them (targeting them in middle frames for animation) without following this up with "exposing" the movements will cause the animation to disregard their movements. Exposing/De-exposing, then, actually is the difference between beginners and expert mode in REAL-3D. If an object has been exposed, it is indicated in an associated instruction window by an "x" in its name. By exposing objects in separated frames, movements are confined to segmented regions of an animation. It's rather complex to understand from a description of the process, but becomes more intuitive the more you work with the process itself. What is important is that it can lead to some interesting ways that objects move during an animation. Animations can be joined (glued end to end) or concatenated (glued together from a targeted frame on). There is also a way to have the computer generate the "in betweens" from one movement to another over a series of frames, a task that Amiga animators expect in any serious animation project. Observer position and aim point can also be fully animated, giving your REAL-3D Amiga animations a variety of possibilities for any one scene, desirable in the storyboarding process, and sometimes these alternatives can actually save memory when writing the animation to a file.

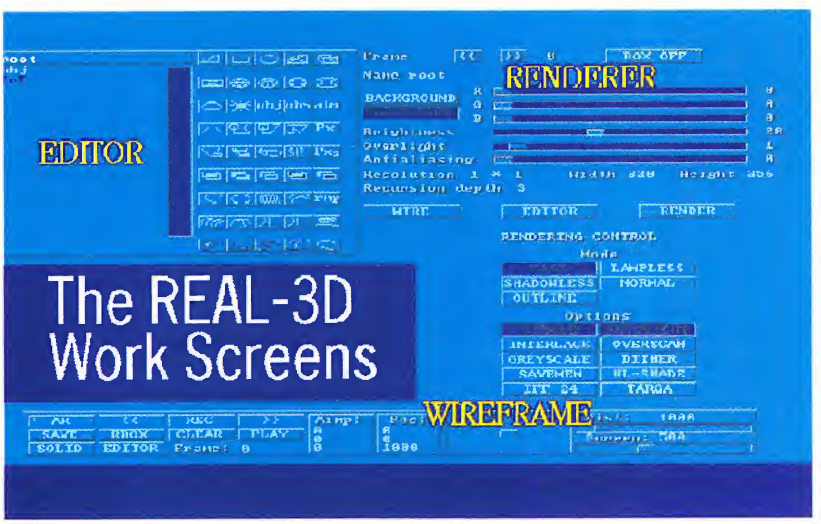

Figure 5: The Real 3D screens: Editor, Wireframe, and Renderer.

REAL-3D has some attributes that make me think it was designed for more then logo videography, and certainly for more then just innocent Amiga fun (though it is excellent for both of these goals as well). It has a function that allows you to calculate the "production costs" of an object, making it a desirable tool for Amiga Computer Aided Manufacturing (CAM). The process is simple and fully detailed in the manual.

Other Observations

REAL-3D's Delta format is not the same as an ANIM5 compression format, and this should be altered as soon as possible if this software expects a share of the American Amiga market. Amiga animators do no want to engage in unnecessary file conversions routines in order to maximize their efforts. They want everything at hand that will aid in the creative process. For this reason too, it would be wise for the developers to consider addressing the DCTV mode (Digital Creations proprietary file format) directly, instead of only allowing 24bit file saves that can later be imported and translated by the DCTV unit. The DCTV unit is fast becoming an Amiga standard as a medium end animation system, and judging by their sale of products at the recent European shows, is spreading its Amiga fame outside of U.S. environs. The REAL-3D format is not an Amiga standard and has little hopes of becoming one, and it takes too long and is unnecessary to reprocess animation frames. Although REAL-3D does convert Sculpt 3D files to the REAL format, it would be better if it addressed Imagine, Videoscape, and/or Toaster-Lightwave files in the same manner.

Conclusions

The easiest way to get the rendering view you want is to use the Wireframe screen's interactive tools. The Editor tools, as far as selecting the correct viewing angle and aim point, are too complicated. Very complex drawings take a lot of time to redraw to the screen. This is true even on a 68030 machine. I would like to see the design of the Editor's quick tools approach a more standardized look in the future. It would also be welcome if this software inported more other formats directly. The HAM renderer is excellent, and it's easy to save to 24bit files. All in all, REAL-3D is a wonderful addition to the Amiga's expanding 3D/4D toolkit, and it probably will spark other Amiga 3D developers to consider new areas of possibility. The development of Amiga art and animation is driven by healthy competition, and for this reason alone, REAL-3D 1.4 is a most welcome player on the Amiga scene. I would especially recommend this software to designers and manufacturers of mechanical items and processes, as it has the capability to turn the draughtsman's vision into colorful and believable 3D REALity (including an option to actually "price" parts in the design process).

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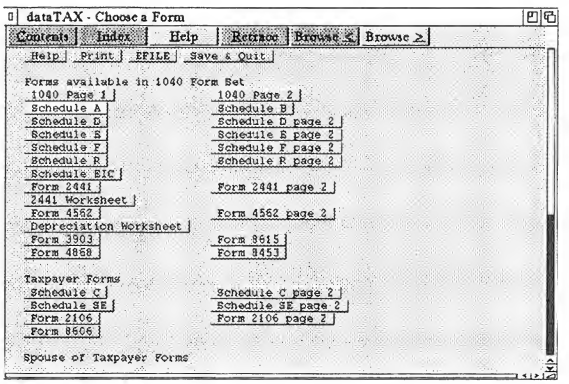

dataTAX works with Workbench 2.0 and 1.3. If you have not yet upgraded to 2.0 you will need ARexx. dataTAX will not work without ARexx. Included in dataTAX is a special offer for ARexx for only $24. ARexx is only needed if you are using Workbench 1.3. We recommend that you upgrade to WB2.0. Hardware Required: Amiga 500 / 1000 / 2000 / 2500 / 3000 with 1 megabyte of memory and 2 floppy drives or hard drive.

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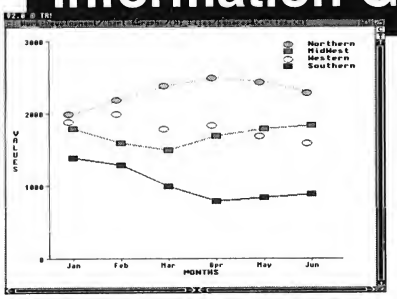

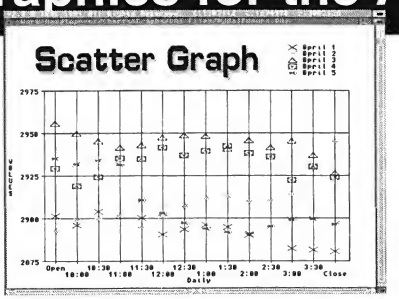

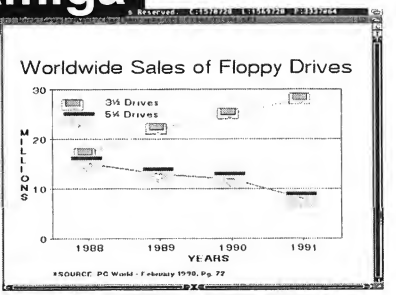

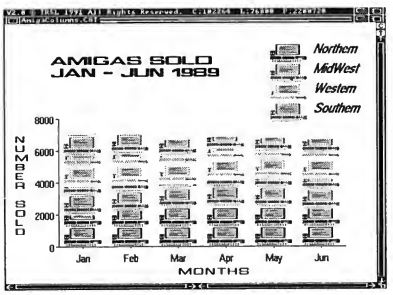

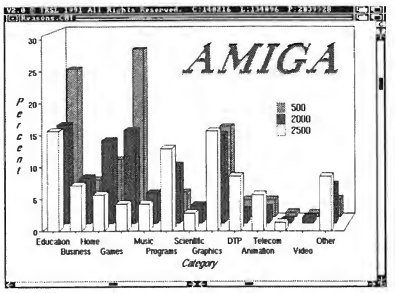

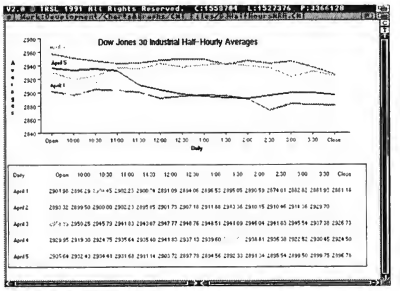

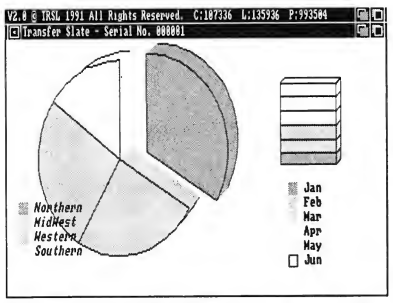

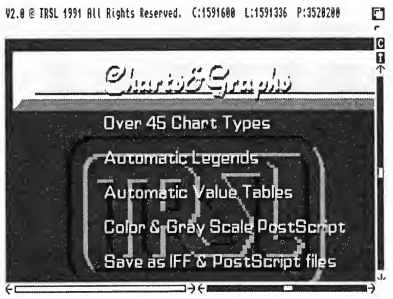

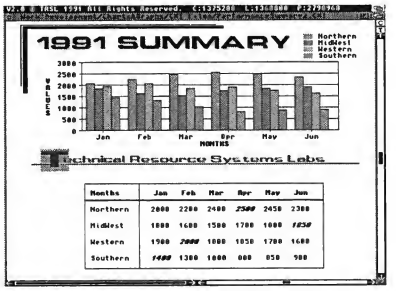

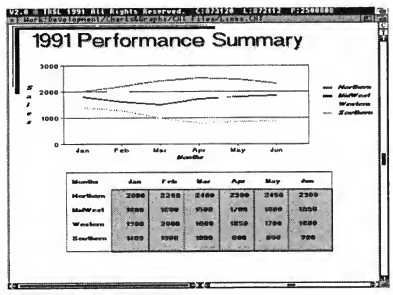

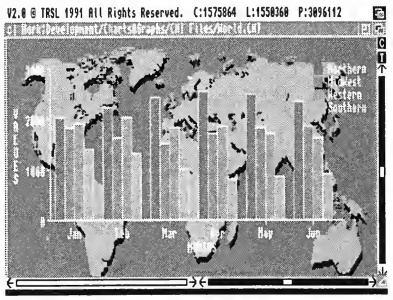

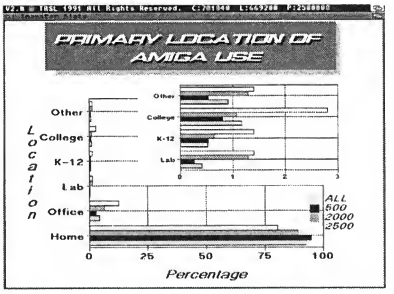

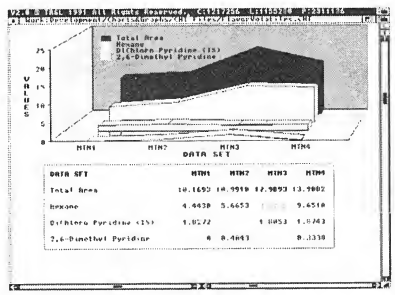

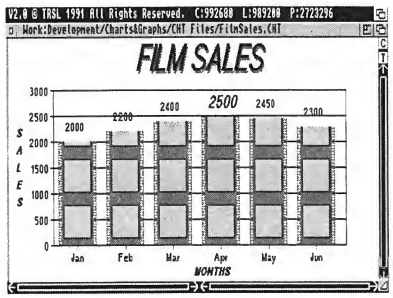

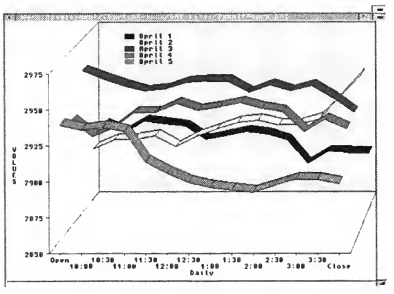

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DKB SOFTWARE'S

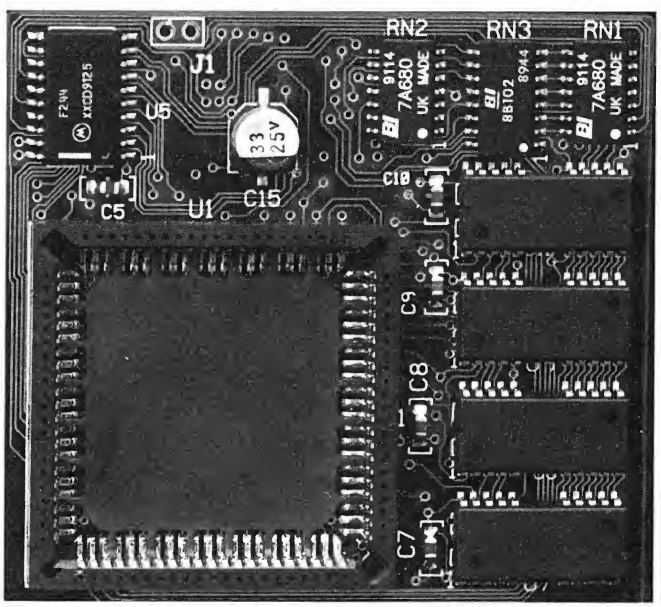
MegAChip 2000/500

by J. V. Botelho

The MegAChip 2000/500 is a chip RAM expansion board that plugs into the Agnus socket on an Amiga 500 or 2000. By utilizing address space reserved for the second megabyte of memory, the board enables up to 2MB chip RAM to be installed on the motherboard. Because the board plugs into the Agnus socket, the installation of the MegAChip board is a bit involved, but it is not beyond the ability of the average Amiga user. However, if you have never taken the cover off your Amiga, the installation is best left to your authorized Amiga dealer.

A few basic hand tools, as well as a couple of specialized tools, are required for the installation. A Phillips screw driver, a flat blade screw driver, a soldering iron (A500 only), a T10 Torx screw driver (A500 only), a wrist band grounding strap, and a PLCC chip extractor are needed to perform a trouble-free installation of the MegAChip board.

The MegAChip board works only with the 2MB Agnus chip and will not operate with the older 1MB or 512K versions. In addition to the Agnus requirements, certain versions of the motherboard may not be compatible with the MegAChip board. If the motherboard is revision 6.0 or 6.1, equipped with a small tower assembly to the left of the RAM array, DKB should be contacted. I telephoned them to find out more and spoke to Bob Tingley. He told me that if you have one of the motherboards in question, DKB would exchange your standard MegAChip board for a high-rise version for the cost of shipping and handling.



The MegAChip 2000/500 chip RAM expansion board for the Amiga 500 or 2000.

The first step in the installation is determining the current memory configuration of the computer. This is done using the 'avail' command. Typing the 'avail' command in a shell window will produce a display of the current status of the memory in the system. The Maximum column shows the total amount of each type of memory (chip or fast) installed in the system. If the Maximum column is six digits wide then the system has a 512K Agnus; if the Maximum column is seven digits wide then the system has a 1MB Agnus. This information is used later in the installation.

The next step is to power down and disassemble the computer. First, the AC power cord is unplugged. Next, all the peripherals (mouse, keyboard, external drives, etc.) are unplugged. The case can now be removed. For an Amiga 2000 this requires, removal of the four side screws (two on each side) and the one screw in the back. Then the case can be slid forward and removed. For the Amiga 500, the unit must be turned upside down and the six Torx screws must be removed. After doing this, separate the top and bottom covers by applying slight pressure to the sides of the case. This will allow the two sections, which are snapped together, to pop apart.

Once the case has been removed, the motherboard must be exposed. On the Amiga 2000, this is accomplished by removing the power supply and disk drives. The power supply and disk drives are mounted on a metal plate which is secured to the chassis by screws in the front, back, and sides. Before the assembly can be removed, the main power supply connector and the floppy drive controller cable must be unplugged at the motherboard. In addition, any power cables going to peripherals, such as hard drives, must be disconnected.

Gaining access to the motherboard in the Amiga 500 requires removal of keyboard and RF shield.The keyboard is removed by unplugging the keyboard cable at the motherboard and lifting the keyboard out of the case. The RF shield is secured in place by four Torx screws and four small metal tabs. The screws must be removed and the metal tabs straightened to allow the shield to be lifted out.

Now that the motherboard is exposed, the Agnus chip can be located and removed. The Agnus chip is to the right of the Motorola 68000 CPU chip and is the only square PLCC component on the motherboard. Removal of the chip requires a special PLCC chip extraction tool which can be purchased from DKB Software for $15.95 plus postage and handling. The tool looks somewhat like a pair of spring action tweezers. The tips of the extractor are hooked under the corners of the chip and the chip is pulled straight out of the socket with a slight side-to-side motion. A word of caution: the chip should not be pried out with a screwdriver as the socket and/or motherboard may be damaged. Once the chip is extracted, it can be set aside since a 2MB Agnus is needed for the MegAChip board. According to DKB, most MegAChip boards are shipped with a 2MB Agnus chip already installed.

Once the Agnus chip is removed, the next step is to make configuration changes on the motherboard utilizing information obtained from the 'avail' command. For the Amiga 500 motherboard, with 512K, the configuration changes involve cutting traces and soldering pads. First, jumper JP2 must be identified. It is located next to the lower left corner of the Kickstart ROM. The trace between the middle and lower pads are cut and then the upper and middle pad are soldered together. The next trace cut to be performed is done two different ways, depending on the revision level of the motherboard. If the level is 6A or higher, then there is jumper JP7A that must be identified. It is located to the right of the Agnus trip and is similar to JP2. The only thing that needs to be down on JP7A, is the trace be-

tween middle and lower pads needs to be cut. If the motherboard is revision level 5 or lower, then there is no jumper JP7A. Instead, the trace that runs from a solder pad across from the eighth pin set of the CNX connector, and then along the connector, must be cut. All the cuts must be done with extreme care to insure no other traces are cut inadvertently. Now the Amiga 500, 512K motherboard is ready for the installation of the MegAChip board. If the Amiga 500 is equipped with 1MB of chip memory, no reconfiguration is necessary.

The reconfiguration of the Amiga 2000, 512K motherboard is much simpler than that of the Amiga 500. For revision 6 or higher motherboards, two jumpers need to be changed. Jumper J101, located to the right of the main power supply connector, must be changed from the connection of the middle pin and the lower pin, to connecting the middle pin and the upper pin. Next, the jumper block shorting the two pins on jumper J500 should be removed. Jumper J500 is located just above the GARY chip. For revision 4.X or lower motherboards, jumper J101 is changed in the same manner as described above, but jumper J500 requires a trace cut. Once again, extreme care must be taken not to inadvertently cut any other traces.

Finally, the MegAChip board can now be installed. There is a notch on the Agnus socket and on the Agnus chip on the MegAChip board. The two notches are aligned and the board is pressed firmly in the socket. Next, there is a jumper wire attached to the board that has a special clip on the end. The clip must be connected to pin 36 of the GARY chip or pin 48 of the 68000 chip. Now that the board is in place, the computer can be reassembled simply by reversing the steps which were described before.

I performed the actual installation and testing of the MegAChip board on an Amiga 2000 configured with a revision 6.2 motherboard, two floppy drives, a 1MB Agnus, and 2MB of Fast RAM. The installation proceeded as described above with one exception. When I had finished installing the board, I thought it best to make sure my Amiga still booted. I put a couple of screws in the disk drive/power supply bracket and reconnected the main power supply and disk drive cables. I then plugged in the keyboard, mouse, monitor, and power cord. I doubled checked all my connections and powered up the beast. Nothing, no disk-in-hand display, no error, "no nothin'." I powered down and tried disconnecting and reconnecting everything. Still nothing. Finally, I disconnected and disassembled everything to allow access to the motherboard. I removed and reseated the MegAChip board and repeated the partial reassembly procedure. This time the system booted and loaded fine. I powered down and booted the system several times for my own peacee of mind, and there were no further problems. Apparently, the board did not seat properly the first time. After completing the reassembly process, I rebooted the system and then ran the 'avail' command. It now shows that my Amiga 2000 has 2MB of chip RAM.

Three packages were selected for software compatibility testing: *ProWrite, Deluxe Paint III* and *Maxiplan Plus*. ProWrite was used to compose this article and the fact that it was completed is testament to the MegAChip board's compatibility. I began the article before the MegAChip card was installed and completed it with the MegAChip board in place. Word processing packages don't typically require much memory, but since ProWrite is a popular package, I thought it would be a good first-level test.

Next, I began experimenting with DeluxePaint III. Before I started, I set my memory configuration to "No Fast Mem." Then I fired up DPaint and began painting a picture. All was fine, so I began to tax the system a little bit more by going back to the Workbench and firing up another copy of Dpaint. I continued to drop back to the Workbench and fire up another copy of Dpaint until I had five copies running and about 50K of chip RAM free. I then began moving between the different sessions of DPaint, making a few changes on each drawing as I went along. Everything worked perfectly, no gurus, no low-chip memory warnings. I went back to each sessions, layer by layer, saved my drawing, quit and went on to the next one until all sessions were closed. Once again everything worked perfectly—no gurus, no low chip memory warnings.

Next I tested Maxiplan. Once again I set my memory configuration to "No Fast Mem" and started up the application. Maxiplan started up without a problem, and I began creating a worksheet. I continued to copy and add rows and columns until I had created a 75 row by 20 column worksheet. I saved it, read it back in, modified cells, and then saved it again. No problems. The tests were not meant to be exhaustive but only to serve as a confirmation of the board's proper operation. There was no detectable difference in the way the system or software packages performed before and after the MegAChip card was installed.

The MegAChip board can be installed by the average Amiga user who has a little bit of skill and a little bit of patience. The *Installation and User's Guide* supplied with the board is well written and easy to follow. The Guide not only contains detailed installation procedures but it is also well illustrated. The MegAChip card, once installed, performs as advertised and delivers a full 2MB of chip RAM. The price is a bit steep at $300 for 2MB of RAM; however, it is the only way to install the 2MB Agnus chip in an Amiga 2000 or 500. •AC•

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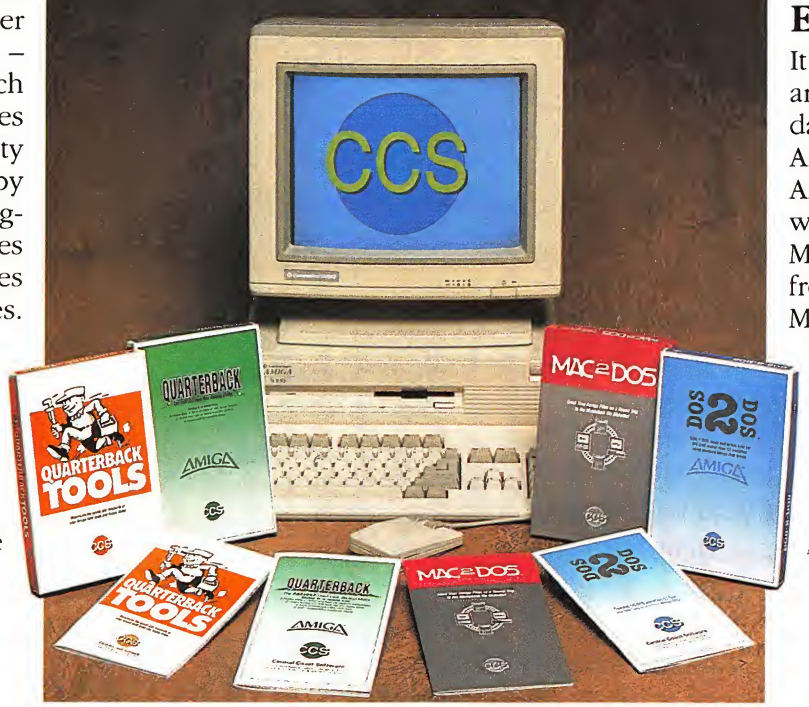

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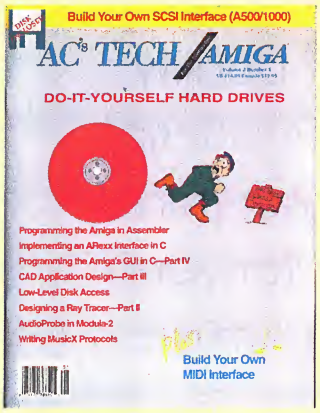

AC's GUIDE To The Commodore AMIGA

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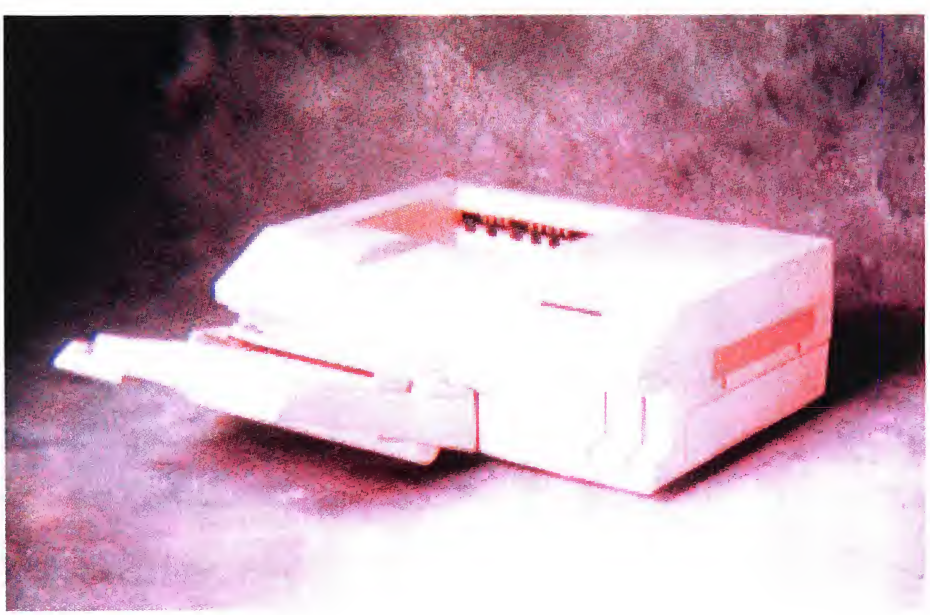
EPSON'S EPL 7500 PostScript Laser Printer

by Merrill Callaway

A quality PostScript laser printer for your Amiga.

There are times when I have to sit back and laugh at my remarkably cavalier attitude about spending a significant amount of money for something. I have frequently found that intuition and word-of-mouth are stronger and more reliable incentives than a careful analysis of specifications, however. I purchased an Epson EPL 7500 PostScript laser printer sight unseen, based primarily upon a feeling. I reviewed another product of theirs, the ES-300C flatbed scanner, that impressed me so much with its thoughtful design and high quality workmanship, that I couldn't shake the feeling that I would be best off with an Epson, when it came time to buy a good PostScript laser printer. I looked at a few printers, some of which had "better" specifications as to print speed, etc., but I ended up following my intuition, much to my joy. Only one person I know had actually seen this printer, and he said it was very fast, thanks to its RISC (Reduced Instruction Set Computing) processor, but I had never seen one demonstrated before I special ordered it at a local dealer. You can get this printer for under $2000 if you shop around, but it is anything but a "bargain printer." Quality is clearly a function of its list price of $3299.



What to Look for in a Laser Printer

There are five main criteria to choosing a laser printer. The first one is the software to run the printer. Every laser printer depends upon some sort of software to control the type faces and fonts as there is no hardware as such to impact the page and print the characters. The characters are written with laser light on a selenium drum which is photoelectric. The electric charge on the drum changes as it is exposed to light. The drum then picks up toner dust by means of the static electric charge on it, and rolls the printed characters onto the paper as it passes underneath. The final step is a fuser which sets the toner, a plasticized carbon powder, with heat. The actual printing of the paper is a process similar to that used in a photo copier, but the image generation on the drum itself is not. There are at the moment two kinds of software to make the laser write the characters on the selenium drum: Hewlett Packard LaserJet (II or III); and PostScript software. Of the two, PostScript is by far the better and more powerful, but almost every laser PostScript printer offers an HP LaserJet emulation mode as a standard feature. It is therefore better to choose a true PostScript printer that emulates HP than an HP printer that emulates PostScript, because once you use PostScript, you'll never go back to LaserJet unless you have to. Also, upgrading an HP LaserJet printer to do PostScript ends up as expensive as buying a PostScript printer in the first place. The only reason I ever use LaserJet mode is to print through Preferences when I am forced to. Commodore has not seen fit to include a PostScript driver in Preferences, an odd oversight given their zeal to be taken seriously as a professional platform. In my initial research, I discovered PostScript's superiority and actually waited over a year for the prices to come down before I made my purchase, rather than buying an HP LaserJet, good as they are. Unless you print just straight text, you will inevitably upgrade your HP LaserJet with a PostScript cartridge; and since in the end you will spend more than if you had bought a PostScript printer in the first place (and your printing will be substantially slower), why bother? That is why I waited, and I'm not sorry I did.

The Minolta Print Engine

The second and third criteria for choosing a laser printer are speed and the type of print engine. Every laser will outperform your old dot-matrix printer, but speed will become an issue as, just as in "The Princess and the Pea," you get used to your new convenience. The speed of a printer is determined mostly by its proces-

sor, and in part by its "print engine." Despite what most people think, there are only a few processors and print engines out there, and many manufacturers who install them in their printers. Avoid the proprietary and the off-brands of print engines. The most universal, thanks to HP, is the Canon engine, which is used in all LaserJet printers. It is an integrated package that contains toner, drum and all. You pull one out and install another and you have essentially a new printer. This is probably the most fool proof way to do it, but as they say a fool and his money are soon parted; alas, this is not the most economical way. The drum, if you take reasonable care of it, will last for thousands of pages more than the toner will. There is a viable industry now to rebuild cartridges, by recharging the toner in them, and cleaning their drums. A major new contender for the "baddest print engine" crown is Minolta, makers of the engine for the Epson EPL 7500. It is rated at six pages per minute (ppm). It, too, is a self-contained imaging cartridge with a drum and toner sealed inside. It is rated at 6000 pages of full text and the price is nearly the same as the Canon, around $100. Some laser manufacturers have elected to expect users to exercise reasonable care not to get peanut butter on the drum and to load their own loose toner. This is definitely more economical, but messy, as demos at stores proved to me. The output was dirty and spotty in every case where a machine used loose toner and a separate drum. Also light ruins drums. Every time you open the hood on a machine with a separate drum, you run a risk. Since those floor models had been opened a lot and misused, their output was degraded unacceptably. In the final analysis, economy is not the main criterion. Other things like maintainability and reliability are much more important. Logistics—keeping your system alive and well under less-than-ideal field conditions—is a subject that few salesmen will broach in the frenzy of the sale.

The Speedy RISC Processor

Speaking of frenzy, we come to processors and their speed. Did you know that many of the PostScript lasers use the Motorola 68030 chip just like in the A3000 computer? The Epson is an exception, but a good one. It uses a RISC processor chip made by Weitek, the small company that recently won a suit filed against them by Intel, alleging that they had violated patent rights. Weitek is one of those giant-killer companies that I wish Commodore would emulate. They personify the free enterprise, entrepreneurial style of the early days of computing. The Weitek is an Intel RISC processor clone that costs a fraction of the original. The reduced instruction set means speed. The latest trend in microchip design is to reduce the complexity and increase the speed, much analogous to a limited access freeway. One of the specifications of a laser printer is ppm, but they don't always tell you that this applies to text and not graphics. If you print an entire page of graphics, the throughput will slow down dramatically. The supreme advantage of a RISC chip is that it almost doesn't care whether its graphics or not. My Epson will do six ppm, and another brand may claim "11 ppm," but my Epson will do almost 6 ppm with full-page graphics and the other one will slow down to minutes per page. It's sort of like the fact that a "slow" Amiga beats a "fast" IBM because of multitasking. After the EPL 7500 warms up to the ready state (70 secs), I do not have to wait a minute for the first page to print; it prints almost immediately. The processing times on complex PostScript graphics programs seem to me very impressive. I ran a PostScript recursion program that makes a fractal design. It has to compute the recursions ten deep, and do this four times: each time after rotating the coordinate system 90 degrees. That's at least 4096 complicated calculations, not counting rotations, line width, and scaling calculations. The page prints only a little slower than a full page of text. I never get the feeling that my printer is slow, and that's the important thing.

Thanks to its RISC processor, the Epson has quite an acceptable speed.

Small Size and Weight

I don't have a lot of room in my office. The size of the machine made a difference to me, and perhaps it will to you, too. The Epson EPL 7500 won me over because of its small size and weight, which I checked before I bought it. It easily fits on the small printer table that used to house my very small Star NX-1000 dot-matrix printer. I had expected to need to buy a bigger table, and this was a welcome bonus. The actual dimensions of the EPL 7500 are a mere 19 inches wide by 14 inches deep, but you will need some 4 inches of clearance in back for cables. The footprint of the legs is even smaller. The overall height is a little over 7 inches, but the printer lid needs 17 inches of overall height for clearance. You will need an additional 10 inches in front for the 250 sheet paper tray, 13 inches if you use the legal paper extension. Since I have mine on a stand with rollers, I roll it out to service the printer. There is an optional face up paper output that attaches to the back and takes up 9 inches. In the basic configuration, the printer will fit into a cubic space (including Epson's recommended access room) of 27 inches wide, by 32 inches deep, by 17 inches high. With the face up output tray—recommended for transparencies and envelopes and stiff print stock to avoid bending—you must add 12 inches to the depth dimension. The weight is a scant 40 pounds including tray and image cartridge. If you're used to a dot matrix printer that you can tuck under your arm, this may seem bulky and heavy, but just wait until you compare these specs with the laser behemoths down at the computer store. For instance a rival PostScript printer weighs in at 75 pounds and is half again as big.

Built-in Fonts

The fifth criterion for judging a printer is by its fonts. The EPL 7500 has the full standard 35 PostScript fonts built in. Since these are the standard PostScript fonts, if you have a program that uses standard PostScript fonts in its driver, then the two sets will match. For instance, I have *PageStream*, and I ordered the fonts plus pack, which contains screen fonts and font metrics for exactly the set of built in fonts on the EPL 7500 printer. Industry standardization is an important advantage of going with a true PostScript printer instead of a "bargain" printer. Don't be misled by the claims of printer manufacturers that 17 fonts is enough. You will not realize the implications of the lack of fonts until it's too late. Downloaded fonts make everything slow down as you need to load them and you'll soon find out how much that extra needed memory and those font cartridges and disks cost. You could have bought an Epson by then. As do most good PostScript lasers, the EPL comes standard with 2MB of

RAM, upgradable to 6MB. Epson didn't skimp on HP LaserJet emulation, either. In HP mode the printer has access to three built-in bit mapped fonts resident in the printer's ROM: Times Roman 10 pt., Helvetica 10 pt., and Courier 12 pt. fonts. In addition, there are two slots, A and B, on the front of the printer that accept HP compatible font cartridges. Back in PostScript, the resident fonts are outline fonts that may be filled any way you choose and scaled any way you want, smaller, larger, tall and skinny, short and fat, in an infinite variety of choices, and of course, you have full graphic capabilities as well.

Set Up

Setting up the printer the first time takes only a few minutes. The lid has a large latch on the bottom of the front edge to allow it to swing up to either 45 degrees or 70 degrees, depending on what you need to do. At the maximum open position, first you remove a protective travel plate which protects the paper entry slot where the paper tray attaches. Then you install the cleaning pad from the imaging engine package, and finally the engine itself. You remove a tape protecting the mouth of the toner slot, and shake the cartridge in the prescribed way and finally slide it home on its rails. Everything is well illustrated and explained both in the manual and in the imaging engine package instructions. The lower position of the lid is there to prevent excess light from affecting the imaging cartridge should you need to clear a paper jam. Since the imaging cartridge is modular and simply slides into its position with a minimum of fuss, there is not much else to do but attach the paper tray and connect the power cord and the cable (either parallel or serial).

Controls and Interface

The control panel allows you to select and configure the interface and select the software mode of the printer. The keys are flush mounted and sealed under plastic but they have good tactile feedback. You can abort a print quite easily by pressing the on-line button and then the reset button. There is an LCD display to tell you what is going on; which mode you are in; and the status of the print: waiting, processing or printing. There are also several LEDs to indicate other status information, as well as a beeper, which may be turned off, to give audible feedback. The commands are implemented by means of a branching menu exactly analogous to your Amiga directory trees. There are four arrow buttons like the cursor keys on your keyboard to go left, right, up, and down, which are used to navigate the menu trees. If you come to the end of a branch in the menu tree, pressing the right arrow again selects that option. Pressing a left arrow pops you up to the parent of that branch; and the up and down arrows take you to other options at the level you are on. In the offline mode, you have access to two Select Type buttons which call up two different menus. Select Type 1 sets: software; input/output for paper and trays; the type of interface; and miscellaneous (reset, recovery, HP memory allocations, and saving/resetting configurations). Select Type 2 sets: serial port protocol; and startup/default general options such as the beeper and whether to print a test page every time you fire up the printer. The test page prints a memory check and how many pages you've printed total. At each Select Type, there are selections to reset to factory defaults, or to save your own defaults in persistent memory. You may select anything the printer can do from the menus as well as from software in PostScript interactive mode through the serial interface using a superset of the printer's control panel settings.

The Manuals

There are two manuals. The main manual is attractively printed on expensive paper in a spiral-bound book. It is copiously illustrated, and there is little chance to

(continued on p.38)

I couldn't shake the feeling that I would be best off with an Epson when it came time to buy a PostScript laser printer.

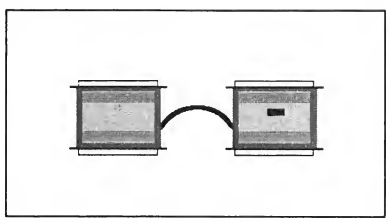
Utilities Unlimited of Oregon, Inc.

PO BOX 532
North Plains, Oregon 97124
(503) 647-5611
(503) 648-8992 FAX
(503) 647-9022 Technical Support

CANADIAN ORDERS:

PO BOX 311
Stratford, Ontario, Canada N5A 6T3
(519) 272-1528

SYBIL



$99.95

SYBIL is a multi-talented hardware/software package. Just look at a few of SYBIL's amazing abilities:

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Disk Compress - Compress entire disks into AmigaDOS files! These files can be transferred to hard drives, tape backup units, modems, or any other means of data transfer. When needed, the file can be de-compressed back on to a floppy so the program can be used. Works with ALL disk formats, copy protected or not!

Extra Storage - Tired of having only 880K of storage? With MegaBench™ you can end your storage problems! Using SYBIL, you can format a standard DS/DD floppy to 1.12 megs! SYBIL is required to WRITE data to these special formatted disk, however, ANY Amiga can READ them! Imagine having a 1+ meg WorkBench!

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Super-Card Ami II

This hardware/software package allows you to make backups of your copy-protected software the same day you buy them! NO WAITING FOR PARAMETERS! The software is straight forward and easy to use. Amiga, IBM, Mac, and Atari ST disks can easily copied reguardless of the copy-protection scheme! The user interface is a delight for novice users to operate, and has all of the features that advanced users demand.
Super-Card Ami II came about after two years of expensive research and development. Now, due to the overwhelming success of this product we are able to offer this amazing backup system at a lower price! Now you can own a HARDWARE copier for less than most software copiers!

$49.95

We now have PARAMETERS! Now you can remove docmentation style (code wheels, manuals, etc.) and disk based copy-protection. As a bonus, you can install many programs on your hard drive! This truely is the last backup system you'll ever need!

Super-Card Ami II Utility Package

This unique software package offers the latest in high tech disk analyzation and manipulation. Features include:

MFM Editor/Analyzer - Allows user to view, analyze, and alter the actual data stored on a disks's surface!
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Have you ever wondered WHERE problems tracks are located? Now, with Super-Tracker you can tell! This attractive digital track display simply plugs into the last disk drive or directly into the Amigs's drive port.

The physical head location (track), and the current head (top or bottom) is displayed.

No serious Amiga archiver should be without one!

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KickStart Board

Kickstart 2.0 is finally a reality! What is also a reality is that a lot of commercial software will not run under OS2.0! This is not the fault of Commodore, the problem lies with the programmer. In any event, you are stuck with software incompatibility. NOT ANYMORE! The KickStart Board allows you to have up to three different KickStart ROM's in your machine at the same time! A simple 3-position switch selects the ROM you which to use.
Installation is easy! Just remove your existing ROM from your Amiga and place it on top of the KickStart Board. Now, plug the KickStart Board into where your ROM was originally...that's it! Works with ALL Amigas that have KickStart on ROM.

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—*Epson continued from p.36*

misunderstand anything regarding the hardware or installation or uses of the control panel. Whenever you have the possibility of getting into trouble, warnings are prominent and clear. The exact procedure for things such as shaking the toner in the imaging engine are diagrammed. Complete tables of factory defaults and printer specifications including paper specs and sizes are listed. It is a wonderful manual. There is a matching companion manual that serves as a supplement to the PostScript Language Reference Manual (not included, published by Addison Wesley). It will be of no help unless you also have the PostScript Language Reference Manual which is a necessity if you are to operate a PostScript printer with any degree of confidence. There is scant information in either manual about how to use PostScript or its fonts; they leave it up to your software application or the Language Manual to explain this. They do include some example illustrations of the things PostScript can do, and a listing of the fonts with examples of what they look like, however. I would have appreciated a little more information, but I understand the omission: the PostScript Language Reference Manual is an inch and a half thick! How could Epson ever condense all that information into anything useful?

Conclusions

The Epson EPL 7500 met all five of my criteria, and exceeded my expectations. The (street) price is surprisingly acceptable and yet it is a true high-end PostScript printer with the latest PostScript interpreter in ROM. It does a transparent job of emulating HP LaserJetII mode as well, and has convenient slots for HP font cartridges. Thanks to its RISC processor, it has a quite acceptable speed of six pages per minute that is relatively unaffected by complex graphics, and the Minolta self-contained imaging engine is designed to be trouble free using the replacement method of maintenance, rather than the messy chore of using loose toner. The Epson EPL 7500 has a small footprint, takes up little space, and at 40 pounds is relatively light weight for a laser printer, but it is ruggedly built and rates highly in the form/fit/function category. There are options for upgrading the memory to 6MB, a face up output tray for transparencies, stiff paper and envelopes, and a bottom paper tray that adds an additional 250 sheets to the standard 250 sheet tray capacity. Paper may be fed through the tray or by single sheet. Envelopes feed and print just fine, as the paper guides are fully adjustable. Maintenance is simply a matter of routine replacement of the imaging engine at about 6000 pages, cleaning the paper path as needed, and replacement of the ozone filter every six months. The printer consumes only 550 watts of electric power instead of the more usual 750 watts of its competitors. Finally it implements the entire standard 35 fonts of the PostScript language and meshes seamlessly with drivers supporting standard PostScript fonts such as those of PageStream2 and others. I have no regrets at all about buying the Epson EPL 7500, and recommend it strongly as an ideal mate for your Amiga and your DTP software.

•AC•

Epson EPL 7500
Price $3299.00
Epson America, Inc.
20770 Madrona Ave.
Torrence, CA 90509-2842
(800) 922-8911
Inquiry #204

Please Write to:
Merrill Callaway
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140

DKB SOFTWARE'S

MultiStart II Board

by L. S. Lichtmann

DKB Software's MultiStart II Board for the A2000/A500 allows up to three Amiga OS ROMs to be present at once.

The Word is that the general release of AmigaDOS V2.0 was so late because a lot of significant software broke under the early versions. So far the effort to ensure upward compatibility seems to have paid off. With one possible exception, none of my "serious" software has had problems under the new operating system. Still, as a reviewer of games, whose programmers frequently have the attitude "bust the rules if you have to, but squeeze the last ounce of performance out of the hardware," I was decidedly uncomfortable with the thought that the ROM swap might cause games I had commitments on to become unrunnable. So when my friendly neighborhood Amiga dealer told me he had a board which would allow me to switch back and forth between operating systems from the keyboard, I leapt at the opportunity to increase my peace of mind.

DKB Software's MultiStart II board for the A2000/A500 allows up to three Amiga OS ROMS to be present in a computer at one time. One ROM can be chosen as the default used on power up. One of the other two chips can be selected as the alternate which can be activated from the keyboard. In a dire emergency, a jumper on the board can be used to switch which of the secondary chips is used as the keyboard alternate.

Upon power-up, the default ROM will determine the operating system version. Warm booting the Amiga retains this OS. However, if the CONTROL/LEFT AMIGA/RIGHT AMIGA key combination is held down for five or six seconds, rather than the usual momentary press, the OS in the chosen alternate ROM will be used upon reboot. Subsequent warm boots will retain this alternate OS, until the five-second hold-down procedure is repeated, returning the system to the power-up OS.

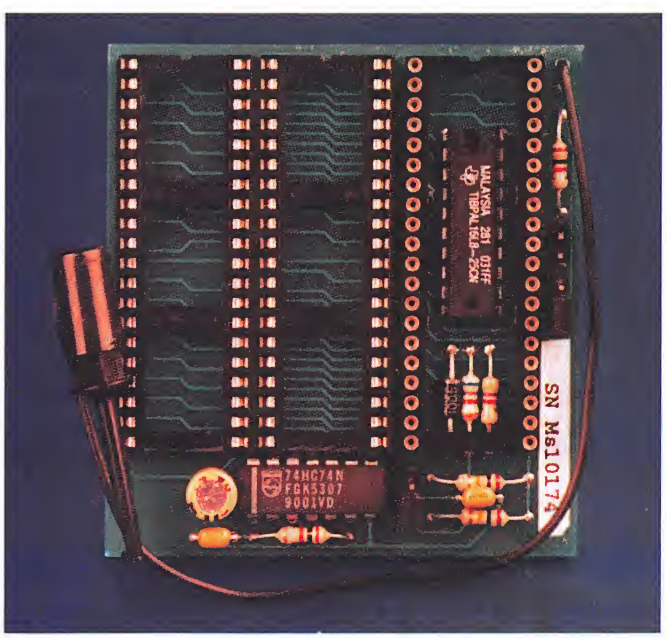
Installation of the MultiStart II is straightforward, but requires some care. The existing ROM chip must be removed from its socket. The two or three desired ROM chips must be installed in the sockets on the MultiStart board, and the board pushed into the vacant ROM socket on the Amiga motherboard. Finally, a jumper wire attached to the MultiStart board must be run to one of the pins of the "Gary" custom chip on the motherboard. The wire has a clip connector on its free end, so no soldering is required. The procedure is clearly detailed in the MultiStart Board's manual, with customized descriptions for both the A500 and A2000.

What I found less than satisfactory, however, was the jumper wire. Its length was really too short to reach the appropriate pin. Worse, it had been attached to the MultiStart board without any strain relief, and while being uncoiled from its shipping position, it snapped off right at the board. Fortunately, a few minutes with a soldering iron, a splice with a few inches of fine wire, and some fast moves with a little shrink tubing were sufficient to repair the damage and eliminate the length problem. *(DKB now ships the board with a 7-inch jumper wire.—Ed.)*

Once in place, everything worked perfectly. The board has already proved its worth on one new game, *Millennium*, which I could not get to run under 2.0. The list price of $99.95 might be a little on the steep side, but if you need the MultiStart II, you probably need it badly. Given the problems I had, though, I would hesitate to recommend the board to anyone without access to electrical tools or without a little experience in electronic repairs.

•AC•

Installation of the MultiStart is straightforward but requires some care.



MultiStart II Board
Price: $99.95
DKB Software
50240 West Pontiac Trail
Wixom, MI 48393
(313) 960-8750
Inquiry #203

Please Write to:
L.S. Lichtmann
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140

PROGRESSIVE PERIPHERALS'

Video Blender

by John Steiner

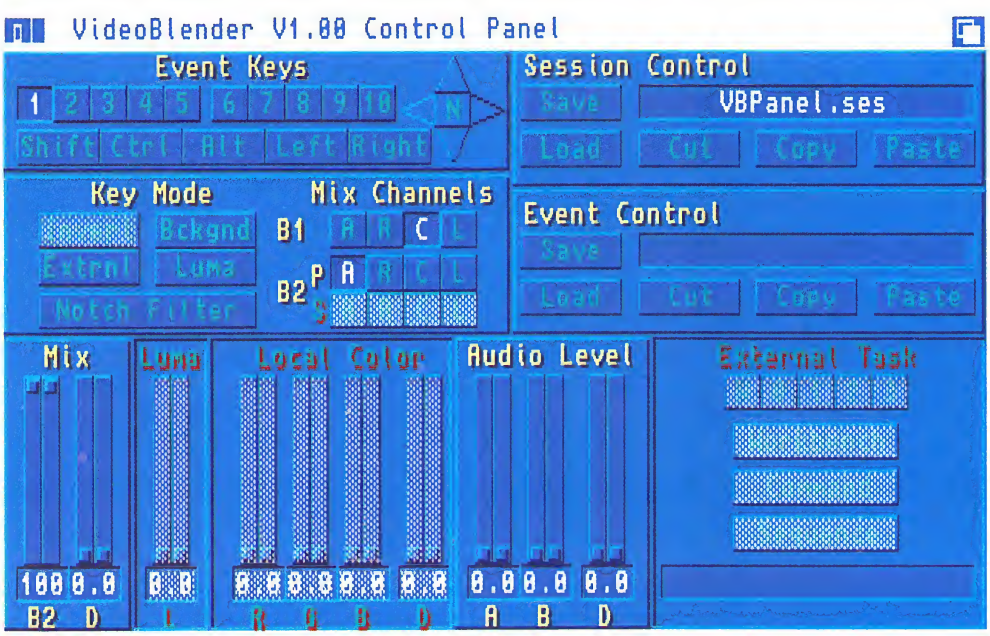
In the beginning there was video titling software and the composite video output from the original Amiga 1000. Then the genlock was born, bringing about the ability of the Amiga to overlay graphics over live video. Then came the Video Toaster, a truly powerful video switching station with 24-bit image-capture capabilities and a complete set of software, which includes a built-in 3-D animation, paint software, special effects generator, and character generator. The Toaster has become the standard by which all other Amiga video peripherals will be measured against.

When I first heard that Progressive Peripherals was developing a "Video Blender," I thought that they were developing a competing product and making another reference to a kitchen appliance. After using the Blender for some time, I have concluded that the Blender and the Toaster are not directly competing for the same customer. Not only that, unlike the Video Toaster, the Blender is aptly named because it does blend video signals in several ways, some of which are truly unique. According to Progressive Peripherals' manual "Examples of video mixing include displaying portions of two different video sources as one image, or simply fading or wiping from one video source to another. Another form of video mixing involves merging live video and computer graphics together." The former example is similar to the switching functions built into the Video Toaster; the latter function can be done by any Amiga genlock device.

The Video Toaster and the Video Blender share some similar attributes, but the Blender can do things the Toaster cannot and vice versa. One example of a Blender feature not available in the Toaster is a dual input stereo audio mixer that is fully controllable from the Video Blender software. In this review, I will stress the specific capabilities built into the Video Blender so that you can make a determination as to whether the Video Blender can deliver the features and functions that fit your desktop video needs and your budget.

Let's start off with a description of the features that the Blender can provide for your desktop video workstation. The heart of the Blender is a standard Amiga genlock with four modes of operation. The modes are defined as foreground, inverted, mixed and encoded; and genlocking can be performed with any standard Amiga titling or graphics package. The Blender can also control genlock functions manually from dedicated function keys, which you define, or called automatically from a script. The Blender performs genlocking functions and transitions from any two of four possible sources, composite video, Amiga graphics, RGB video and a local 16-million color background screen. Fades and transitions can be precisely timed from 0 to 10 seconds in .04 second increments. Video mixing can provide double exposure or tinting effects. Automated switching between sources provides many special effects, and a notch filter helps to sharpen the edges of a transition. Software utilities allow you to create and modify custom wipes and include them in your video presentations. The built-in stereo audio mixer can also be operated under manual or automatic control. Audio fades can also be precisely timed from 0 to 10 seconds in .04 second increments.

One accessory that is not available at this writing is an optional S-VHS video switcher which allows S-VHS equipment to work with the Video Blender and Progressive's Rambrandt 24-bit graphics board. The switcher can be configured for A->B roll (wipes) between two VCRs. This application would require that each input VCR signal be time-base corrected.



Create video "events" in the Video Blender's Control Panel.

Hardware Description

The Video Blender is an external component. The circuitry is housed in a metal box that is about the same depth and width as an Amiga 3000. The unit stands just over 2.25 inches tall and fits nicely between your monitor and Amiga 2000, 2500 or 3000. The Blender also works with Amiga 500 and 1000 CPUs. The package includes a serial cable, which is necessary to connect the Blender to your Amiga system and also includes four BNC to RCA adapters in case you wish to use cables with RCA connectors instead of the video industry-standard BNC type. Power to the Blender is provided by a large "brick"-style black box power supply, which can be placed on the floor or in some other out-of-the-way location. The Blender is nicely finished with attractive screen-printed nomenclature on the front and rear panels. All controls are located on the front panel for easy access. The controls allow adjustment of hue, saturation, and

➔

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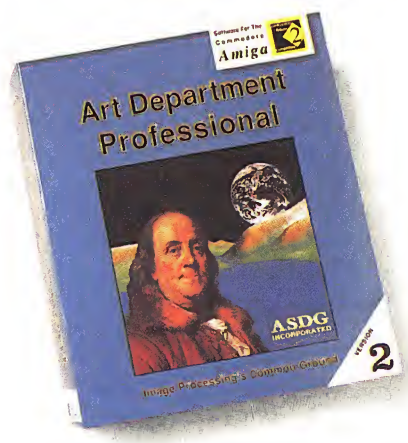

which otherwise couldn't be done at all.

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contrast for the video output signal and audio attenuation controls for the dual input audio mixer. A power switch and indicator light are also located on the front along with the four RCA-type audio input jacks for the audio mixer.

The rear panel is chock-full of connectors. There are so many, in fact, that there is not room for the audio input connectors which are placed on the front. This unfortunate necessity mars the streamlined appearance of the front panel, requiring you to run audio cables around or under the unit to connect to the audio inputs. On the positive side, if you routinely change audio inputs from a CD player to a cassette deck, or a camcorder to a VCR, for example, the cables are right out in front and easy to get at. The rear panel connectors allow a lot of flexibility in connecting external equipment. Here is a short description of each of the rear panel connectors. The Video IN connector locks the Amiga's video sync to the equipment supplying video at this jack. An RGB input consists of three BNC-type connectors, one each for red, blue, and green. With this input, you can connect any video equipment which outputs separate RGB signals. If you connect an RGB-equipped, genlockable camera, you can use the Blender to switch between it and the master video input (or any of the Amiga signals) without requiring a time-base corrector. I view this input to be of limited usefulness for the semi-professional or amateur videographer as RGB cameras are not likely to be readily available.

There are two Video Output connectors, each containing the same video information. One of these is connected directly to your final output device, usually a VCR, and the other is connected to a composite video monitor to provide a practical means of viewing the video that is being recorded. In my system, I use a 1080 monitor to view the signals I'm recording. A Video Through connector supplies a signal that is identical to the Video IN connection that could be connected to a monitor to allow easy viewing of the master video input source. A 75-ohm terminating switch is provided for this output to allow proper impedance matching, whether or not a monitor is connected. Two other video connections supply Black Burst for video sync and External Key Input for connection of special video keying devices such as a Chroma Key.

Left and Right Audio Output connectors are provided to deliver audio to the recording VCR or other appropriate output device. The only two connections which connect to your Amiga system are an Amiga 23-pin RGB passthrough port and a 25-pin serial port. The 23-pin cable that comes attached to the Video Blender is connected to your computer's RGB Video port, and the standard Amiga RGB monitor cable is connected to the 23-pin port at the rear of the Blender. If you are using a deinterlacing board, or have an Amiga 3000 with built-in deinterlacing, you can ignore the RGB passthrough connector on the Blender and use the deinterlaced video connection as you always have.

Communications to the Video Blender are provided through a serial cable, which is connected between the Amiga and Blender serial ports. This connection frustrated my original purpose for using the Video Blender. I was planning to use the Blender for AmigaVision multimedia presentations. I have access to a Pioneer LDV-2200 laser disk player, which is also controlled through a connection to the Amiga serial port. The genlock I am currently using in this application is controlled through the parallel port, and the video disk and genlock get along just fine. I was hoping to use some of the excellent special effects and audio mixing features that can be implemented in the Blender to liven up my presentations. It appears that I will be required to obtain a multiple serial port card. Whether the Blender and a video disk player could be controlled from the dual serial port via an AmigaVision application is something I was never able to test.

The last remaining connection on the Blender is for the power supply cable, which leads to the power brick. The brick has an AC power cord attached as it is too large and heavy to be plugged directly into an AC outlet. Having a power cord to plug in is much more convenient than trying to find room to plug in a large "brick"-type power supply with built-in AC prongs. It seems that they always take up more room than they need to on an outlet strip.

MixMaster is composed of two screens—a menu and a background which can contain an animated wipe.

Software Installation

I was able to install the Video Blender software without a hitch. The included installation program will even create the drawer in which you want to place the software. There are two disks included in the package, the Blender disk and an Accessories disk. Once the installation is complete, the documentation provides a testing technique to make certain that the Blender is fully functional.

Video Blender Software

There are six major software applications which were developed for the Blender. A description of each one of these programs is listed here.

VBPanel, the Video Blender's Control Panel

This program controls the Blender hardware and allows you to create, define, and preview video "events." An event is defined in the manual as "...anything that causes a change in the current video output. An event may be as simple as a 'fade to black' at the end of a scene. An event may be quite complicated, involving keying effects, or graphic and sound overlays." You will start learning about the Blender with the VBpanel as it is the tool most used for operating the Video Blender manually. Starting in the upper left corner of the screen, the controls marked Event Keys are used to define up to 50 events or non-events. An event can be described as a programmed change in the status of the Blender hardware. A non-event can be described as a function key that is not defined. The advantage of this feature is that if your titling program uses function keys for its own operation, you can still use VBPanel by defining keys used for other programs as non-events. In that way accessing those function keys will

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control your other software. You define an event by selecting a function key, for example, click on Ctrl, then click on 4 to define Ctrl-F4. Then define any combination of key mode, channel mix, local color, key level, audio level or external task. Save that definition using the Event Control file requester which is accessed in the Event Control portion of the panel. Once you have defined all functions needed for your presentation, bring up the Session Control file requester and save the entire session. Key Mode allows you to determine which of the four genlock modes you wish to activate. Mix Channels allows switching between bus lines B1 and B2. When Bckgnd mode is selected, the lower half of B2 is activated allowing you to mix or overlay any two of the four video sources on the output bus. A, R, C, and L represent Amiga, RGB, Composite and Local color sources respectively.

The lower left of the screen contains sliders for mixing percentage on the B2 bus. The dual sliders can be set from 0 to 100%, or you can click in the box below the slider and enter a number directly. The D slider programs the time it takes for the mix to change from its previously defined setting to its new setting after you press the currently defined event key. The dual slider can be set from 0 to 10 seconds in .04 second increments. As with the Mix slider, you can also click in the box below the slider and key in a specific time delay. Located immediately to the right of the Mix sliders, the Luma slider adjusts the threshold at which keying occurs between the Primary (P) and Secondary (S) inputs on bus 2.

The three sliders labeled R, G and B on the Local Color section can be set for any value between 0 and 255, allowing the creation of a local color screen that can be used as a background to overlay graphics, or to luma key behind live video among other applications. Since each slider can be set to 256 possible values, this local color screen can be defined as any of 16.7 million colors. The D slider adjusts the time delay for the transition to occur after pressing the defined event key. The audio level sliders adjust the volume of Channels A and B, thus mixing their output at the audio output connectors. The delay slider adjusts the amount of time between settings changes once the appropriate event key is pressed.

The External Task component in the lower right of the screen allows you to select a workbench application, a CLI application, or a batch file. The tutorial that covers this function fell apart because of changes in the programs that were included with the Video Blender release version. I did have some limited success in calling external tasks, but it was not as simple as I had expected. When I called Progressive's technical support line, the person I talked with commented that I would get better results by using the VideoScriptor and Slides utilities to perform functions that might otherwise need to be done by an external task in VBPanel. In the case of the tutorial, they were attempting to use an external IFF file viewer. VideoScriptor can display IFF files and ANIMs internally. I can imagine that I might have to use an external task to control a video disk player, and I am not sure if that would be possible given the problems I had. Much of the problem I encountered was related to the ability to hide specific screens from view. It is possible to tell VBPanel to hide the screen that the external application uses. I couldn't get this function to work consistently, and I am not really sure how much of the problem is related to the changes made in the release version files.

Once you have created your session in VBPanel, you can then hide the control panel and control your presentation directly from the event keys you defined. There is sometimes a slight delay between pressing an event key and its subsequent effect occurring. This is so because of the extra overhead built into the editor. VBPerform contains only enough of the program to present sessions created in VBPanel, and consequently operates much more quickly. What this means is that once you have created your presentation, you should use VBPerform to control it.

> The Blender is aptly named because it does blend video signals in several ways, some of which are truly unique.

VBPerform

This program functions as an external task, enabling all of the pre-defined events created originally in VBPanel. It, in effect, turns your keyboard into a video event player. You can press the pre-defined function keys as your video is being recorded, and since VBPerform doesn't have its own screen, it won't interfere with graphics or titles being displayed.

VideoScriptor, the Automated Script Generator

This program allows you to create a script that contains delays, and standard or custom wipes and otherwise automate the activation of video events.

VideoScriptor uses a graphical user interface that allows the quick creation of relatively complex presentations. Figure 3 shows the main VideoScriptor screen. A complete description of the workings of the program would take more space than I have in this review, but the general idea is to choose buttons to select items to be included. On the bottom left, Wipe is highlighted, and the area above Wipe displays a list of wipes to select from. If IFF were highlighted, a file requester showing a list of IFF images and animations would be displayed. If Custom were selected, a list of previously created scripts would be presented that could be included in the current presentation. If Control were selected, you would see a list of previously defined VBPanel events. When you select an item on the left side of the screen, it is automatically added to the script on the right side. If a command requires an argument, such as DELAY 180, the program will insist that you provide the necessary information.

I used the VideoScriptor program extensively to create many sample scripts and did not run into any major problems. I did not, however, try very sophisticated scripting. In fact, if you really want to take full advantage of the Slides program, you will learn how to edit and compile your scripts from the CLI as you will be able to complete many of the most powerful features of the Slides program. The manual contains a complete programming section for Slides which identifies the function and usage of every command in the language.

Slides, Video Blender's Automated Presentation Program

The Slides program reads and executes the scripts created with VideoScriptor. In addition to controlling events, Slides can display images and animations as well as perform standard and custom wipes. The program can perform all of the functions which can be accomplished in the VideoScriptor, and additionally perform other commands in a sophisticated scripting language that is more powerful than the basic VideoScriptor program can create. You can use a text editor to create complex programs or modify programs that were originally created in VideoScriptor to take advantage of the greater power built into the Slides program. Like VBPerform, Slides runs as a background task which won't interfere with any images which are currently being displayed.

This program reads a binary script that was prepared in one of two ways: A) Written in a text editor and compiled; or B) Created by the VideoScriptor Automated Presentation Generator. Slide can perform five different tasks: 1) display IFF images and animations, 2) execute any of several built-in wipes, 3) play previously written scripts, 4) externally control VBPanel, and 5) provide timed or cued delays. Slides must have a script, and does not have its own visual interface. The language that Slides knows is relatively simple to learn, and quite sophisticated for its simplicity. Even so, learning a scripting language can be a time-consuming process which can take many hours of study before you would be ready to complete productive work on your Video Blender.

MixMaster, An Automated Wipe Generator.

This program is really a two-color paint program that allows you to create your own custom wipes. These wipes are simply two color animations where color 0 is genlocked to live video. Though you could use any paint program to create animated wipes for the Video Blender, MixMaster has several features and built-in functions which are specifically tailored to the task of generating animated wipes.

When you start MixMaster, you will see a screen similar to the one on page 42. This is really two screens, the menu at the lower fourth of the screen, and the background which will contain an animated wipe when you are finished. If you have used animation programs such as *DeluxePaint* or *Animation Studio*, you will feel pretty well at home working with MixMaster. The tutorial had me making several very nice AnimWipes in no time at all. The program has the ability to use 10 built-in brushes and 10 custom brushes which are stored and retrieved using the numbered interface on the right hand side of MixMaster's screen Remember, these animated wipes are created as two-color animations with the transitions occurring between color 0 and color 1 in your animation. Though I missed some of the more powerful features I am used to using in DeluxePaint, most of the time MixMaster functioned to my expectations. In fact, I tried to use DPaint to create my own animated wipes, and gave up as MixMaster worked much better. I was hoping to improve upon the wipes by loading them into DPaint once they were saved as an anim, but I had limited success with this. They would come into DPaint at the wrong resolution, or in a different size, and generally my attempts to modify these anims ended in failure. Once you have created a wipe in MixMaster, you can then use the wipe in scripts that you create for the Slides program.

Wiper

This program allows experimentation with what the manual describes as "over 24,000 standard (algorithmic) wipe combinations."

Video Blender Documentation

The package includes a 264-page manual that is complete and reasonably well indexed. It is written well but suffers from a common problem which besets the first release of any major product. It was developed before final product release, and last minute changes in the software make parts of the tutorials incorrect, leading a beginning user to confusion at best, and at times makes continuation of a tutorial impossible. A "readme" file speaks to some of these changes, but that doesn't always help when you are trying to understand a complex function that doesn't appear to work as described in the manual. The manual includes two Quickstart tutorials and seven comprehensive tutorials. Some of the tutorials cannot be completed in their entirety unless you have an RGB camera at your disposal. This is not a major disadvantage as you won't need to complete those tutorials if you don't have the camera. Other than the aforementioned glitch regarding final release software, the tutorials are quite well done. They assume no prior knowledge and begin by defining proper hardware connections for performing each task. The Video Blender is a powerful desktop video accessory. Expect to spend a lot of time learning to operate it effectively, and even more time developing creative and functional scripts for your video productions.

Automated switching between sources provides many special effects, and a notch filter helps to sharpen the edges of a transition.

Recommendations

The Video Blender is a complete video production studio for your Amiga, but it is not quite perfect. It is not by any means a replacement for a Video Toaster; yet at $1495 suggested retail, it is much less expensive. Its presentation capabilities are far superior to the typical Amiga genlock device, and yet it costs only somewhat more than many of the high-end genlocks. If all you need is genlock capability, you should probably consider several quality units that are now available for less than $1000. If you want automated presentations, the Video Blender will deliver them quickly once you climb the learning curve. If you need more powerful video switching capabilities, you have two choices: wait for the accessory switching unit to be made available or buy a Video Toaster.

Progressive Peripherals has a long history of providing high quality Amiga peripherals, and this product is another important example of their dedication to the Amiga market. •AC•

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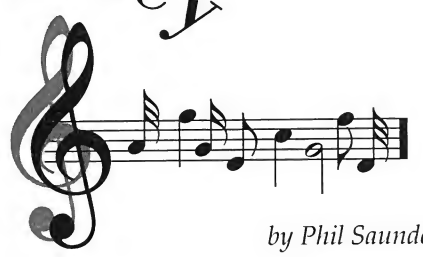
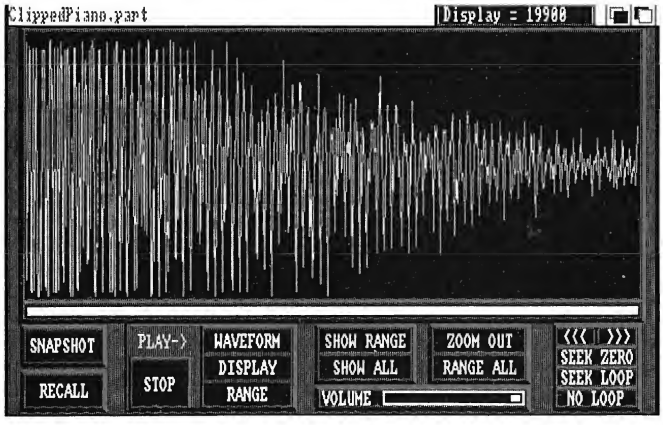


by Phil Saunders

Many of my recent columns have dealt with synthesizers and MIDI sequencing. While this is definitely the best way to produce high quality music on the Amiga, the internal sound chip is surprisingly capable of producing good sound. This month we'll look at how you can use audio digitizing (also known as sampling) to produce instruments for *Deluxe Music Construction Set*, *SONIX*, and other Amiga music programs.

The first requirement is an audio digitizer. I've used both the Mimetics and PerfectSound digitizers with good results, but there are many others available that will work equally well. Most plug into the Amiga's parallel port, but the Mimetics digitizer uses the second mouse port. The second requirement is a way to get sounds into the digitizer. You can either use a microphone or hook up a CD or tape player directly. The advantage of a direct hookup is that no background or room noise will be recorded, providing a clean sound to the digitizer. In addition, a direct hookup will often allow you to control the level of the incoming signal, an important factor in recording good quality samples. Similarly, a separate microphone preamp can improve sample quality by boosting the microphone signal before it enters the digitizer.

If a signal level is too high when recorded, the result is "clipping" distortion. Notice the top of the waveforms.



A third tool that makes life much easier is good sampling software. While most digitizers come with software to make simple recordings, the software may not be optimized for visual editing and making IFF instruments. Editing software, such as *AudioMaster III* or *Audition Four*, can easily create instruments and special effects like echoes.

Finally, you need something to digitize! This can be the sound of your voice, household appliances, musical instruments, or the latest CD. If you're interested in instrumental sounds, but don't have access to an orchestra, you may want to consider the sampling CDs that several companies sell. These typically provide samples of a variety of different instruments, ready to be digitized. Sound Effects CDs and tapes are also available. If you aren't trying to recreate a particular instrument, you might just look around the house for things that make an interesting sound.

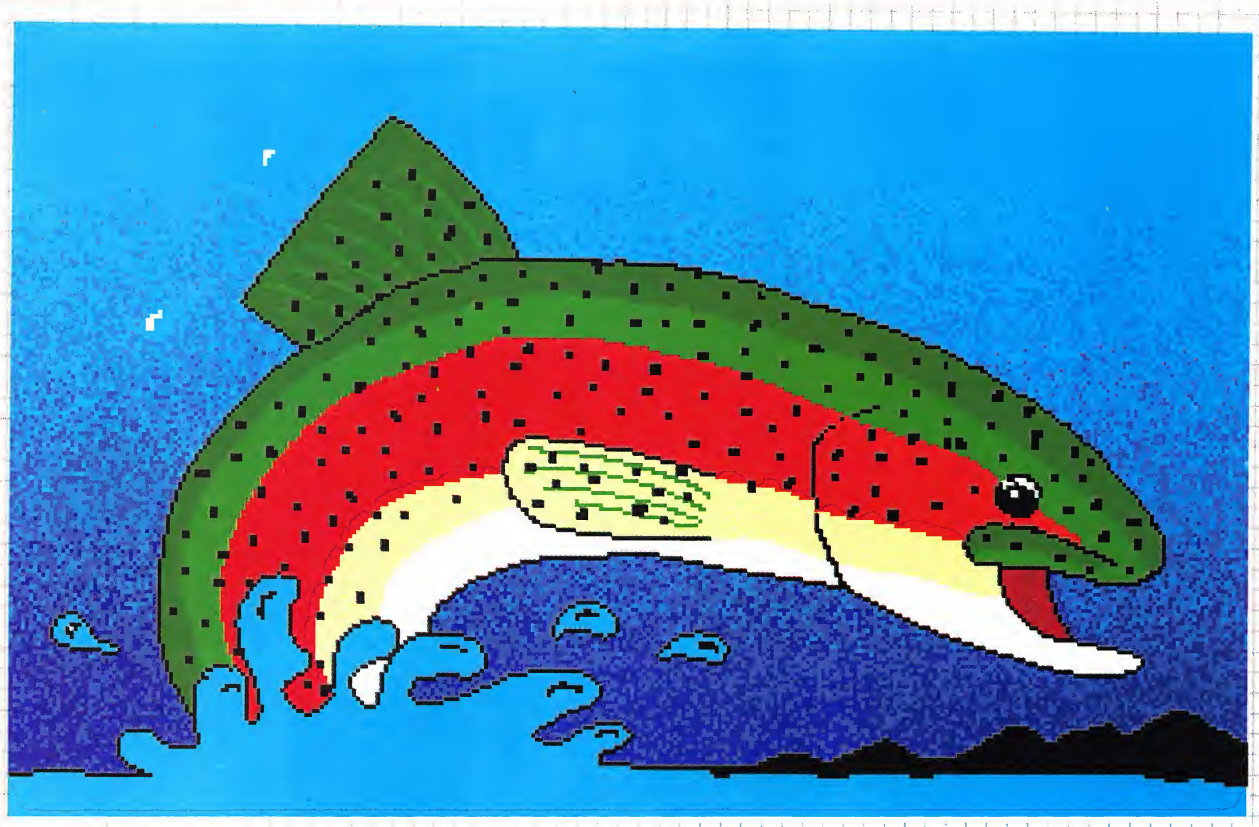
Once you have the right hardware and software, you must choose the sampling rate. The higher the pitch of the sound, the higher the rate needed to capture it without distortion. The sampling rate must always be twice as high as the highest frequency you want to record. So the answer is to use the highest sampling rate your software and hardware support, right? Not necessarily. Higher sampling rates use more memory and aren't supported by Amiga IFF instruments. A sound sampled at 28 kHz takes twice as much storage space as one sampled at 14 kHz. Amigas have a low pass audio filter that eliminates almost all frequencies above 7 kHz, anyway. The bottom line is that you need to use a high enough sampling rate to catch the high frequencies, but may not need to use the highest rate available. Some software can "resample" sounds using software algorithms to reduce the amount of memory required while keeping the sound at its proper pitch. This allows the software to create better quality IFF instruments. This is the best reason to use a high sampling rate, since ordinarily rates above 18-19 kHz won't be supported by IFF instruments.

After you've got the right sampling rate and have a clean sound source, the next step is to set the input level—the most crucial step in the process. You want to record at a high enough level that you will get the maximum signal to noise ratio. However, you also want to be careful not to overload the input by using too high a volume setting. Most digitizers have input controls; if they don't, you'll need to control the volume at the source. Signals recorded at too high a level result "clipping" distortion. The tops of the waveforms are clipped when they exceed the digitizer's range and the clipping is audible as harsh distortion.

A better recording has lower peaks and no clipping distortion. However, if you set the level too low to avoid clipping, you may end up with a signal that has a low overall volume level. One way to avoid this problem is to compress the signal before digitizing it. Compression lowers the volume of the loud parts of the signal while letting lower level sounds pass through. A compressor will allow you to record at a higher overall volume level without clipping, improving the average signal to noise ratio. When comparing a recording with compression to a normal recording, the compressed sample has higher peaks, especially at the tail end of the sample.

You can use other effect devices to alter the sounds you want to sample. Echo and reverb enhance many instruments; by digitizing samples with the effect "built-in" you can use one effects device on several different instruments. Radio Shack makes an inexpensive "echo box" which will work, but if you are serious about digitizing you may want to purchase a dedicated effects device. Some software allows you to create echo effects by highlighting a

(Continued on p. 92)



Left: "Trout", by Germantown Academy student Michael Cole. Below: Also from the Germantown Academy, a picture titled "Music", by Laura Love.

Graphic Design on the Amiga

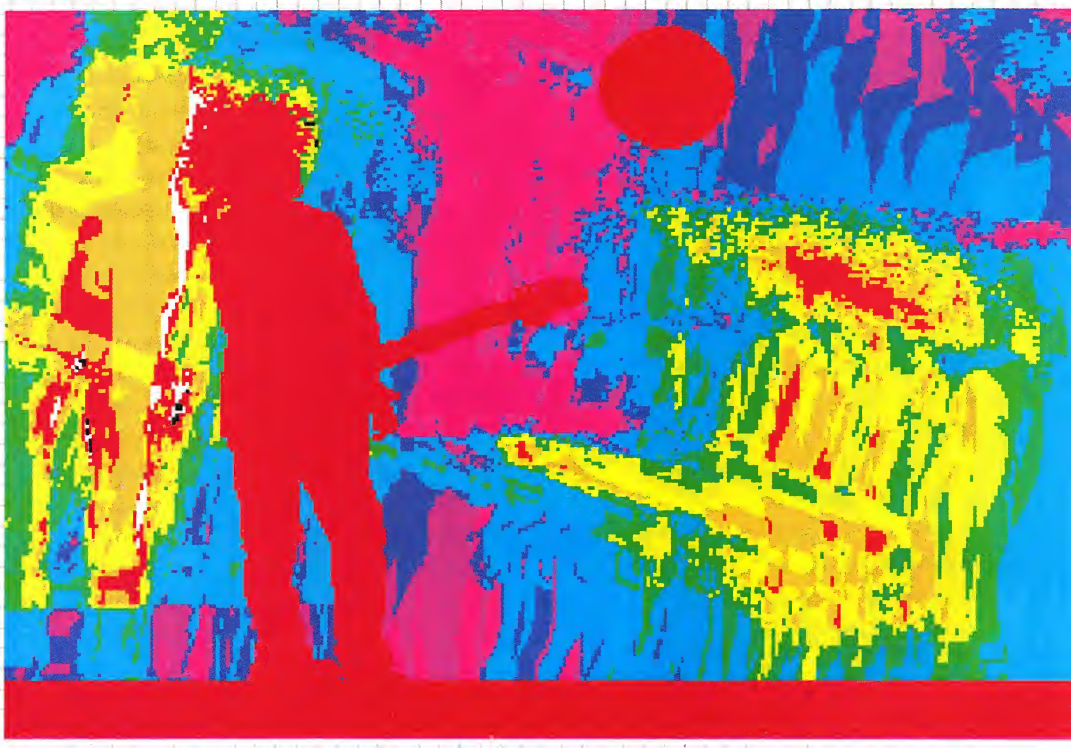
Drawing, painting and animating on the Amiga has never been easier and the Amiga's ability to produce spectacular results has never been better. With programs such as *DeluxePaint*, *Ray Dance*, *Real 3D* and *The Art Department* as well as peripherals like DCTV and the Video Toaster, the Amiga artist has never had a better set of tools. This month, we salute Amiga artists and their efforts with a special focus on graphic design.

These next few pages show examples of what you can do with an Amiga and your imagination. Many of the pictures shown were created by high-school art students using Amiga 2000s and DeluxePaint. All the works are spectacular and demonstrate perfectly what our favorite computer can do.

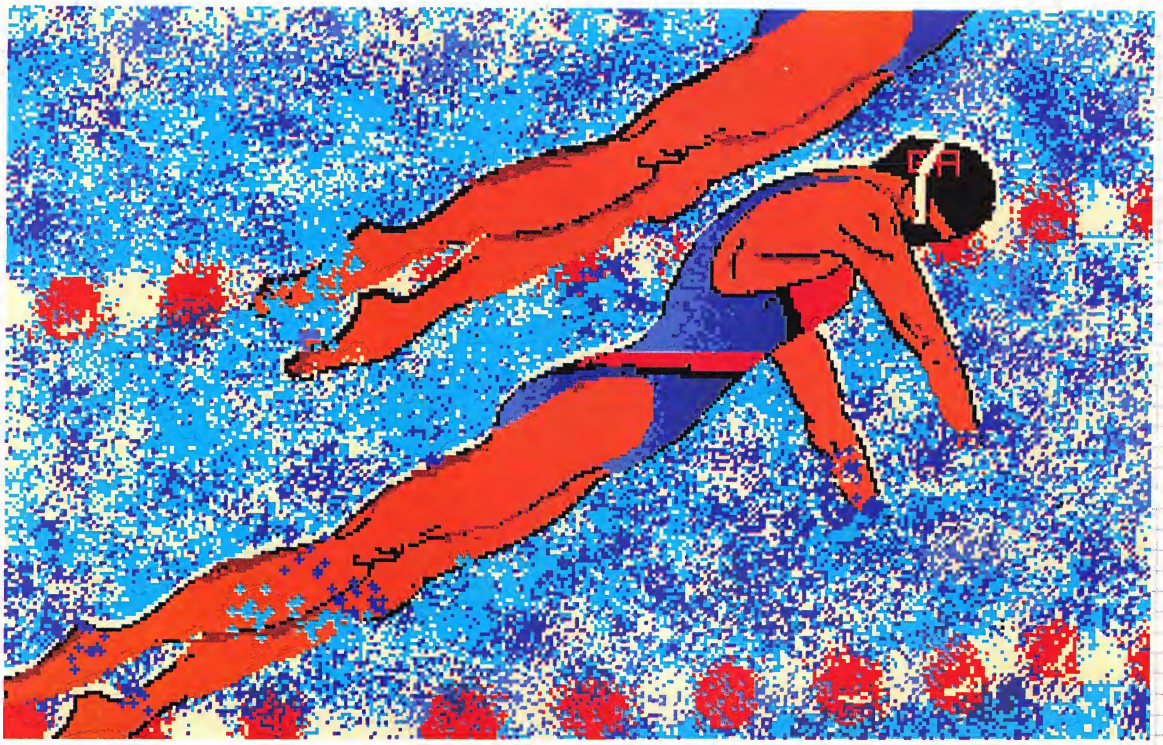
Also in this issue, you will find several articles designed to give direction and inspire creativity among the community of Amiga artists. Perhaps the articles will inspire more people to try their hand at Amiga art. Be sure to check out the reviews of *DeluxePaint IV*, *Real 3D*, the *Video Blender* and *Scenery Animator*. Also, you may be able to pick up some tips from the articles on semi-automatic painting and screen photography, not to mention the multimedia tutorial.

At any rate, enjoy the creations, and to all Amiga artists, keep up the good work.

•AC•



From top to bottom: "LaCrosse Players", by Sam Jackson of the Germantown Academy; "Chess Set", by Kevin Lude and "Planter" by Charlie Comstock. Mr. Comstock's design was created with RayDance.



From top to bottom: "Swimmers", by Germantown Academy student Danielle Strader; "Luke", a cowboy by Swedish artist Anders Bjern; "Basketball", by Kevin Lude; and "Pattern Design", by Brian Beatty, also of the Germantown Academy.

by Frank McMahon

Introducing a monthly feature on Amiga video, designed to help and inform the Amiga user.

Writing a novel, filming a movie, printing a newspaper—some forms of medium are foreboding merely by the vast amount of expertise and work involved. Not video. Video is a medium that these days almost anyone can do. Low costs have put video in the hands of just about everyone. People have also been gradually lowering their standards as far as production values and formats, with camcorder shot news items all the way to "America's Funniest Home Videos"—a network show shot mostly on VHS without a tripod. Meanwhile professional grade options such as S-VHS, Hi-8mm, and the Video Toaster have had proven success. New videographers may be frustrated finding a way to rise above the competition, but those with an Amiga know better. Which brings us to the purpose of this new column. Every month I'll bring elements together centering on creating Amiga video. Reviewing new products, tutorials, hints, tips... Whether you are just starting out with a camcorder and an Amiga 500 or are working at a television station trying to find a larger optical drive for your Amiga 3000, this column will help you make better Amiga video.

Video Toaster Backgrounds

Creating backgrounds for text with the Video Toaster is fairly easy. The Character Generator section of the program provides a method to create a smooth gradient spread from one color (the top of the screen) to another color (the bottom of the screen) when creating a frame page, with the default spread being green to blue. The 2 color spreads are nice but tend to get a little boring after awhile. *Art Department Pro* and DCTV both can create great multicolored backgrounds, but they are separate programs, leading to multitasking, fileswapping, and IFF24 to Toasterframe conversions. Wouldn't it be nice to create backgrounds with four or six or 10 different color spreads from within the Toaster? Well..you can! Most Toaster users are at least somewhat familiar with the ChromaFX portion of the program. ChromaFX is similar to a set of photographer filters, allowing the user to run video through variations of colored effects based on the luminance (black and white) of the incoming signal. Chances are you played around with it when you first got your Toaster, and after previewing the built-in dizzying color effects decided you wouldn't have much use for changing the world to mind-numbing shades of orange and pink. Truth is ChromaFX has many hidden uses, and one which I discovered is using it to create gradient backgrounds on the fly. Even if you've never used ChromaFX, just follow these step by step instructions and you'll have some beautiful backgrounds to save as frames in under five minutes:

Video Toaster ChromaFX background is used as a texture map for a Lightwave 3D logo rendered by the author.

1. After booting up the Toaster, enter the ChromaFX "slice" to the left of the ToasterPaint icon. On the top of the ChromaFX screen you'll see an Effects Selection bar. For now leave it in the default effect which is "00-Posterize."

2. Right below the Effects Selection bar is a toggle for Blurred and Sharp Transitions along with a Posterization slider bar. One icon shows a blurred transition and the other a sharp one, the sharp one being just two solid colors. Clicking the sharp one on the right and moving the Posterization slider

below towards the right will gradually "unsmooth" the transitions between colors. You'll see the results in the large shaded bar (Palette Map) just below the Posterization slider. For now we want the left Blurred Transition icon selected and the slider moved to the absolute left side.

3. Below the Posterization Slider is a large shaded bar called the Palette Map. Click on the Darkest Box on the left side of this bar. This selects the position of the first color we will create.

4. Next click on the RGB icon below. Move the R (red) slider about 75% to the right, leaving Green and Blue all the way to the left. This will produce a dim red. Then click on the HSI slider and move the H (hue) to a desired color. Any will do for now..we're experimenting!

5. Select the Lightest Box on the right side of the Palette Map bar (you'll notice the black line called the Palette Marker will jump to the right side of the spread—this let's you know what color you are changing). Repeat Step 4, selecting a color using the Hue control. Any color is fine but it should be different than the first one we created.

6. After creating a color, select the Horizontal Spread Button (a single straight line icon right below the Palette Map bar). The black and white spread in the Palette Map will change to a smooth gradient blend between your two choosen colors.

7. Below on the screen there is a separate window called the Color Table. In it you'll see the colored spread you just created near the top of the window and a grey scale spread near the bottom. We've just created the colors for the top of the page, now we need to do the bottom half. You'll notice there is an arrow selected to the right of the Color Table at the top, letting us know we are working on the top spread. Click the arrow on the bottom right of the Color Table — disregard the "dual arrow" icon for now. The Palette Map above switches to grey scales to show we are now ready to edit the colors in the lower part of our screen.

8. Repeat Steps 3-6 to create the lower two colors.

9. Below in the Color Table you'll see a small representation of the final background screen. Click on the Clapboard icon directly above the cancel icon. After a few seconds of rendering your arrow pointer will return. Select OK.

Creating backgrounds for text with the Video Toaster is fairly easy using the Character Generator or the ChromaFX portions of the program.

Now that you're back in the switcher click on DV1 on the program bus..there's your background! It has been rendered to the Toaster's framebuffer meaning you can now save it if you wish. To save it click on the Save Frame icon (lower-right picture of a frame with an arrow pointing to a disk), type a three-digit number with the Amiga keypad, click inside the blank filename requestor above the number requester and type in "background1." Then hit enter on the Amiga keypad twice. You don't have to save the background if you already had some CG key pages pre-made to cue up over it...just roll tape and go. However if you needed to enter the CG to create new key pages, the CG editor normally dumps DV1 for testing purposes which would require the background to be re-rendered or loaded from the hard drive.

Wouldn't saving a lot of 1MB background frames use up a lot of hard drive storage? You bet. So here's a better solution: In case you didn't know..saving a project also saves all your premade ChromaFX color effects along with other items such as CG pages. So after you've created a colored effect following the above steps, go to the top of the screen to the Effects Selection bar in ChromaFX and using the arrows go to the next "slot" after "00-Posterize" and create your next masterpiece. After creating several premade patterns exit ChromaFX (select OK) and from the Switcher go in to Preferences and select the "Save to Disk" icon (pointing *to* the disk) in the Project window. These colored backgrounds will now be available for rendering every time you boot up your Toaster. Consult your manual for more info on creating multiple projects and default projects.

Some of the gradient backgrounds will suffer from "banding" where you can see the colors change. This may be desirable, but it can be eliminated by color experimentation. Also try to keep colors dim. Background screens are for the *background*; they shouldn't be fighting your text for attention. Also try black and white grey-scale shades for a real professional polish. These backgrounds are not just limited to the CG, they can be loaded right into ToasterPaint for creating title screens, rub-thru effects, and other uses. In fact by using the darken and blur command in ToasterPaint you can dull the screens if needed. They can also be used in Lightwave 3D. I've used them for everything from texture maps, bump maps, and reflective maps (see article screenshot). They also make great 3D backgrounds, just load them in via the "Load Background" requester in Lightwave 3D after saving them as an RGB frame with ToasterPaint. In fact once you convert them to an RGB frame (actually an IFF24-bit image) you can use them in any program that supports the IFF24-file standard such as The Art Department Professional.

So what do those *other* buttons do in ChromaFX? Well go through the above steps and instead of selecting the Horizontal Spread button choose one of the three other buttons to the immediate right: Horizontal Spectrum, Random Color, and Snow. By the way, you're not limited to two color spreads; you have up to 96 colors to change in the Palette Map! You can click *anywhere* in the Palette Map and change a particular color: 1. Click on a color inside the Palette Map bar (you'll see the black Palette Marker jump to that location), 2. Change it with the RGB/HSI sliders, 3. Click on Horizontal Spread, and 4. Choose another color somewhere else in the bar. It's that easy. After your color spreads are finished try clicking on the seven buttons to the left of the Color Table window for more variations. By the way, the "dual arrow" button mentioned above is actually the Exchange Color toggle; it's OK to try

(continued on p. 54)

Do You See a Change in Color?

by John Iovine

Do we really need 24-bit color? Let me answer this question right away; despite all the promotion and products to the contrary, in a word no. Before you throw this article aside in the belief that I'm a little off the color wheel, allow me to present the information as I see it, pun intended.

First let's define 24-bit color. The 24 bit derived by the addition of the three 8-bit color components; red, green and blue (8+8+8 = 24). Each of the 8-bit color component numbers can represent one of 256 possible levels. When we multiple the 256 levels by each of the three color components we get 256 x 256 x 256 = 16,777,216. This is how the 16-million-colors-possible claim is derived for 24-bit color.

16 Million Colors for Whom?

If we wanted to display all of the 16 million colors at once, our monitor screens fall pretty short. You see a 320 x 200 screen only contains 64,000 pixels so the maximum number of colors that could be drawn on the screen is 64,000. And that's assuming every pixel is a different color. Likewise a 640 x 400 screen contains just 256,000 pixels. So it would be impossible to show all the 16 million colors available at any one time on a screen. So the 16 million colors are reduced to a color palette from which one can choose colors.

Even more important than the screens resolution is the information that can be obtained from 24-bit color systems themselves. A histogram graphs and identifies the colors used in digitized pictures. Of all the histograms I have analyzed of 24-bit color pictures, not one ever came close to using all the colors available. Typically full color pictures use only 100,000 colors. Out of this more than half were single bit colors used only once. Usually these pictures could compress their pixels colors 3:1 without any degradation of image quality.

More important than the information contained in a histogram, is the visual color acuity of the human eye. Color perception varies from person to person. On average you need about a 1.5% change in color—some people require greater than 1.5%—to notice a difference. Each change in level of an 8-bit (256) color component represents about a .4 % change. Therefore the level would have to step at least four times before a difference could be perceived. And the difference itself would be so slight and subtle that chances are it would not significantly affect the picture quality.

If you look at the information thus presented, I sure you will be lead to the same conclusion that I have—that 24-bit color systems are really an overkill.

Drawing the Line

My belief is that color resolution could have proceeded to 18-bit color and stopped. Here each color component uses 6 bits per color (64 levels). Each change in level represents a 1.56% change, which matches closely to the perceptual resolution of the human eye. The color palette (64 x 64 x 64) of 262,144 colors would be more than enough to accurately represent full color pictures.

Does this mean that someday soon someone will put out an 18-bit color system? Probably not. It would be a marketing nightmare to compete against 24-bit systems regardless of the fact that no one could differentiate between a 24-bit and 18-bit picture.

The Resolution Revolution

The idea then is not to try to turn the clock back, so to speak, to an 18-bit system, but to resist any further increase in color resolution like 32-bit or 48-bit systems (à la Mac). By doing so, one sends a clear message to the manufacturers to put their money into other features of the program or digitizer.

I'm sure the contents of this article will be bitterly debated and categorically refuted by various manufacturers currently selling 24-bit color devices. I'm not attempting to stall the evolution of video, but there comes a point where further development in a particular area such as color resolution has already passed the point of the human eye's ability to perceive it. The eye's ability to perceive subtle color changes was passed at 18 bits of color. So why 24-bit color? Well it sounds nice doesn't it?—24 bits, throw in some "broadcast quality" quotes, and you're cooking.

Simple Program

Although the Amiga is incapable of displaying the subtle changes in color of an 18-bit or 24-bit system, we can manipulate the palette, and use our imagination.

The basic program is quite simple; when it is run, a red block is painted in center screen. The block is actually made up of two smaller rectangles. Pressing the "u" and "d" key changes the percentage of red in the palette of the rectangle on the left side of the screen. The changes in the palette are displayed above the rectangle. In the display 1 = 100 percent and the decimals, note the percentages less than 1.

On my display I need to bring the red down 10% points before a change can be seen. Subsequent changes required 6 or 7% points. The reason it takes such a large percent to see a change has to do with the stock Amiga display, not with the visual color acuity of the human eye. Regardless, look at the display with just one increment of change between the two rectangles. Now imagine that with an 18-bit system there would be about four shades of red between the two red colors that you would be looking at. Many people wouldn't see all the shades. With a 24-bit system there would be 20 shades between the two, and you definitely couldn't see all the subtle color differences.

The program is quite simple and is easily modified to change the green and blue components as well as the red. For anyone thinking about modifying the program to operate in HAM mode, this will not improve the color resolution of our test program. The color change that can be derived by modifying the palette is the optimum for the stock display.

In Fairness

There are advantages to 24-bit color, but unless one is involved in some heavy duty image enhancement projects, the use of 24-bit color or greater is superfluous. By "heavy duty" I mean something on the order of enhancing a satellite image of the earth to track schools of fish in the Atlantic, or analyzing the geology of Mars to look for dried river beds. Here pixel differentiation that cannot be seen with the eye may be enhanced with the computer to bring forth details that would otherwise go undetected.

(continued on p. 54)

INOVATRONICS'

Interface Design Kit v1.5

by Dave Spitler

If you have spent much time with *AmigaVision* or *CanDo*, you know that interactive programming requires lots of buttons, arrows, and gadgets. Individually, these pieces are not hard to create, but creating a whole library of them can eat up a lot of time and effort.

INOVAtronics, the folks who brought you CanDo, have leaped into the gap with the recent introduction of *Interface Design Kit* (IDK). IDK is, quite simply, a very nice clip art collection for interactive programmers. When you first look at the contents, your first reaction will probably be "Hey, I could make all of this stuff," but then you realize that for a number of reasons, you have not. Besides, there is some nice work here. The graphics are a unified collection of pieces reproduced in various forms to be used in making a very classy program. They have been assembled with an eye toward ease of use for the programmer who has to create under pressure.

IDK consists of a manual and four disks. The first two disks contain organized screens of medium and hi-res brushes along with a viewer program, some borders and a readme file. Disks three and four contain all of the individual parts reproduced as brushes.

The manual is most valuable as an index to all of the graphics. Each of the screens is depicted in the manual. Each element on each screen has a name and that name is actually the brush name for that element. This means that the you can browse through the manual and quickly find the elements that you need for a program or presentation. Once you know what you want to use, you can use a paint program to construct your screens from the hundreds of brushes which IDK provides.

However, merely glancing through the manual will not tell you how lovingly the various parts of this "kit" have been constructed, however. To see the parts the way they will appear on the screen, use the browser program or any paint or viewer program. These disks contain all of the elements you will need to build the classiest screens you could ever want. The colors chosen give everything that muted "2.0" look, but instructions on palette changing are also thoughtfully provided.

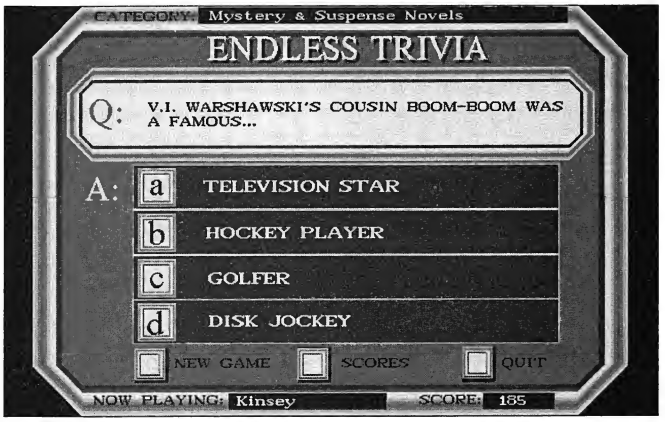
The design and organization of IDK's parts is impressive; all clips are presented in the manual exactly as they appear on disk.

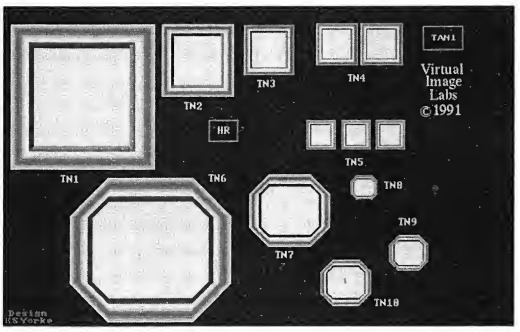
The design of IDK's parts is impressive, and so is the organization of all of these parts. All of the clips are presented in the manual exactly the way they appear on disk. The medres and hires screens are crammed with carefully numbered elements, so it is a snap to find everything.

It should be pointed out that there is actually nothing offered in this package which cannot be created from scratch by any author who has access to a good paint program. Moreover, that unified 2.0 look and those severly limited palettes would eventually give your work a sameness which most authors want to avoid. IDK is well done, but why would anyone want or need to buy it?

A collection of clip art for interactive programmers.

The first and most obvious reason might be that you want to play around with your authoring system, not your paint program. Learning how to use CanDo or AmigaVision properly can be time consuming enough without having to spend hours creating the screens you need for your experiments. Also, you can assemble the screens you need quickly and easily and use the time saved to de- ➔





Top: A sample screen created with the use of CanDo and the Interface Design Kit. Bottom: Some of the squares and octagons which were modified to create the sample screen.

sign your program or production. This means that Interface Design Kit could be a lifesaver for people who have to create multimedia presentations in a hurry.

The last argument for buying this package hinges on the way you create your presentations. If you are one of the people who prefer to do a "quick and dirty" sketch of a program or presentation to see how it is going to shape up or you like to be able to change screen elements "on the fly" as you create, you will probably believe that IDK was created with your needs in mind.

However well it is made or presented, Interface Design Kit was created for a limited audience. If you are a member of that audience, you will definitely want to add this package to your collection.

•AC•

Interface Design Kit
$59.95
INOVAtronics
8499 Greenville Ave. Ste. 209B
Dallas, TX 75231
(214) 340-4991
Inquiry #236

Please Write to:
Dave Spitler
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140

Interface Design Kit:

How the examples were made.

Nothing is ever just the right size for what you want to do. In order to create boxes just the right size for the examples, I stretched or shrank the boxes provided by IDK. To do this, place the box on the screen and then pick up a piece of the box as a brush. If you are expanding the box, just stamp the piece down on the screen until the box has grown big enough. To shrink the box, stamp the brush down in reverse (paper color) until the box is as small as you want it. (Alternately, you can cut a section out of the center of the box and then join the two sections.)

To make data boxes, place the box where you want it to be, then draw a solid box in another color where you want to have the data appear. Don't see a box with the text you want to use? Lift out the text and insert your own. Set the background (paper) color to the same as the top of the box you want to change. Then Pick up the existing text as a brush using the RIGHT mousebutton (DeluxePaint III or IV) leaving a the box clean. Then, use the text feature to type in the text you want. If you don't have the text centered properly the first time, don't worry. You can pick it up and put it back as many times as needed to get it right. You can make needed symbols in the same way by altering existing symbols until you have created what you want.—*DS*

—*COLOR*

(continued from p.52)

The other arena is keeping up with the Jones, or in our case the Mac and IBM PC computers. Because these mainstream computers continue into 48-bit, 64-bit and greater color resolution, the Amiga may have to keep pace just to be considered equivalent. This is essential for Commodore to keep its small niche in the video market, although the usefulness of these high-bit color resolutions is at best questionable.

•AC•

Program

```
REM  J. Iovine
' Not 24 Bit Color
PALETTE 0,0,0,0
PALETTE 1,1,1,1
PALETTE 2,1,0,0
PALETTE 3,1,0,0
COLOR 1,0
LINE (170,50)-(270,120),3,bf
LINE (271,50)-(371,120),2,bf
 a = 1  :LOCATE 6,37:PRINT "Value = 1"
 start:
 LOCATE 6,22 :PRINT "Value =";USING"##.##";a
 k$ = INKEY$
 IF k$ = "d" THEN a = a -.01
 IF k$ = "u" THEN a = a +.01
 IF k$ = "q" THEN END
 IF a > 1 THEN a = 1
 IF a < 0 THEN a = 0
 PALETTE 3,a,0,0
 GOTO start
```

Please Write to:
John Iovine
c/o Amazing Computing
P.O. Box 2140
Fall River, MA 02722-2140

—*VIDEO*

(continued from p. 51)

it now! Also try some Sharp Transitions on for size. Remember, moderation is the key and with a little experimentation you'll have a whole hard drive full of usable backgrounds!

Well that about wraps it up for now; in the meantime if you have any questions, tips, or comments concerning Amiga video you can write to me at the address below.

As for a little background on myself, I've been working in television about 10 years now, starting with a public access show back in 1981. For the last five years I've been the Production Supervisor at WCTV Westerly Cable Television in Westerly, R.I. We produce talk shows, series, specials, and even a soap opera. I have been using the Amiga in video productions since I purchased an A1000 the month it came out. At the station we use Amigas on a constant daily basis. I have a home studio as well centered around an A2500 with various editing decks and video gear. In addition to freelance video work I also use the Amiga for more creative avenues such as producing movies (which we'll get into in later issues). Although the column will center mainly on using video in a prosumer and professional atmosphere, we'll cover the creative and entertaining side of Amiga video as well.

•AC•

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"Semi-Automatic" Painting and Animation

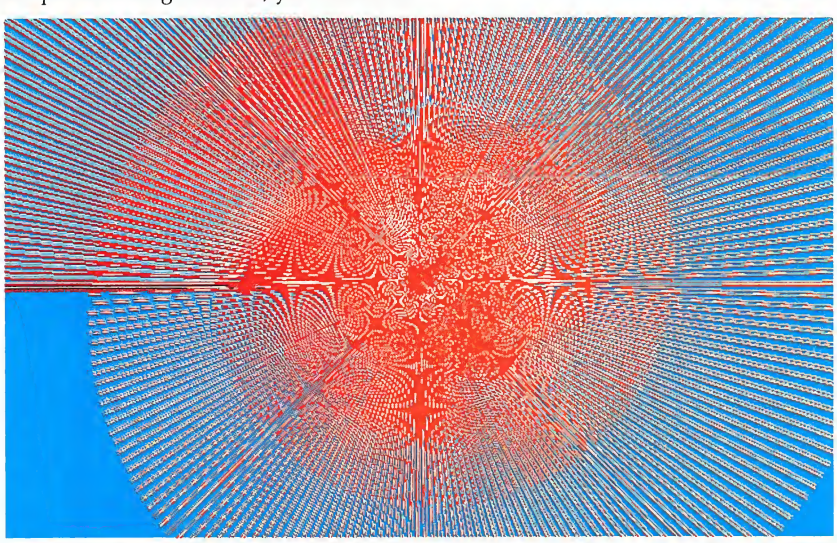
by Kevin Lude

When a programmer makes a creative tool, he or she often underestimates the power of that tool. Besides the nearly infinite intended uses, users often find interesting things that can be done with the program that were never imagined. This is known in scientific circles as "Synergy," a phenomenon where the whole, working together, is greater or more unpredictable than the sum of the parts.

The most popular software tool for the Amiga has undoubtedly been Electronic Arts' *DeluxePaint* in all its versions. After years of exploring its nearly perfect combinations of tools, I've stumbled upon a strange and wonderful process that can create striking, delicate abstract paintings, and dazzling animations almost automatically. No artistic skill is necessary, though a good eye and a sharp imagination can be helpful. All you have to draw is a single straight line.

I call this unique, nearly-automatic process "Semi-Automatic" painting, and its effects vaguely resemble fractal designs. Unlike fractals, however, you don't need to be a math wizard to exert specific control over the finished product. To get started, you will need either DeluxePaint III or IV and 1MB or more of RAM. For our first example, start by drawing a long line and picking it up as a brush. Press Alt-z to grab a handle at one end of the brush. Stamp it down with the handle near the center of the screen, like a clock hand. This tells the computer where to start. Tap F10 to clear the menubars. Now choose MOVE from the ANIM menu (shift-m). Select a high COUNT, such as 300 or more. Type 360 in the Z ANGLE box, and click the PREVIEW button. PREVIEW allows you to test the path of your brush across the screen before all of the rendering starts. Click on DRAW. Now sit back and relax as your Amiga does all the hard work. This simple example will produce a starburst with moire pattens. It takes a while, but part of the fun is watching your painting take shape.

Here's a method of making a perfect snail-shell spiral. Draw a one-inch dot and pick it up as a brush. Press Alt-z to grab it from about six inches away from the circle's center. Stamp it down slightly off-screen as a starting point. In the MOVE requester, select 400 or more in the COUNT box. Tap in 7200 for the Z ANGLE, and about 4500 in the Z DIST box. Try a PREVIEW.DRAW. Try it again, but with CYCLE mode on. Hit your Tab key and watch the show. Your Amiga should begin drawing your brush in a delicate whirlpool around the screen. It may take a while to complete, especially if you're in hi-res. If the spiral doesn't crawl to the center of the screen, just press shift-m to bring up MOVE and hit DRAW again. Repeat if necessary. This will continue the brush's journey to the middle.



Color cycling turns your painting into something special if used correctly. Other posibilities include changing the count size, using the SHADE mode, and starting at a different screen position.

Perhaps you can set up a range and select cycle mode to slowly shift through the palette as it's created. Color cycling turns your S-A painting into something really special if used correctly. Other possibilities include changing the count size, using SHADE mode, starting at a different screen position and placing the brush in a perspective angle. If you are using the new DPaint IV, try HAM mode with transparency set at 50% or less. Change your resolution or palette. Modify the center point of the screen to avoid total symmetry.

The most important tools to play with are the numbers in the DIST and ANGLE boxes in the MOVE requester. Kicking in values that divide unevenly so as to produce irregular patterns across the screen works nicely in some cases.

Avoid large, opaque brushes that block out a lot of previously drawn brush areas. Use small, thin brushes or shapes that contain a lot of holes to allow the viewer to see the subtle patterns that your poor Amiga has worked so hard to display. Often a brush will give more "action" if you set the handle a few inches away from the center. It's a good idea to test the action of the brush with the PREVIEW button. If you have a horrendously large number of frames set, try testing it with fewer frames temporarily to save time. When you're happy, reset the number and DRAW.

Two common problems surface when testing. The first is that the brush can spend much of its drawing life off-screen if the coordinates are set incorrectly. The second has to do with the brush getting too "close to you," causing big jaggies and occluding areas of the painting. You can often fix this by adding some positive Y DISTance to push the brush away a little.

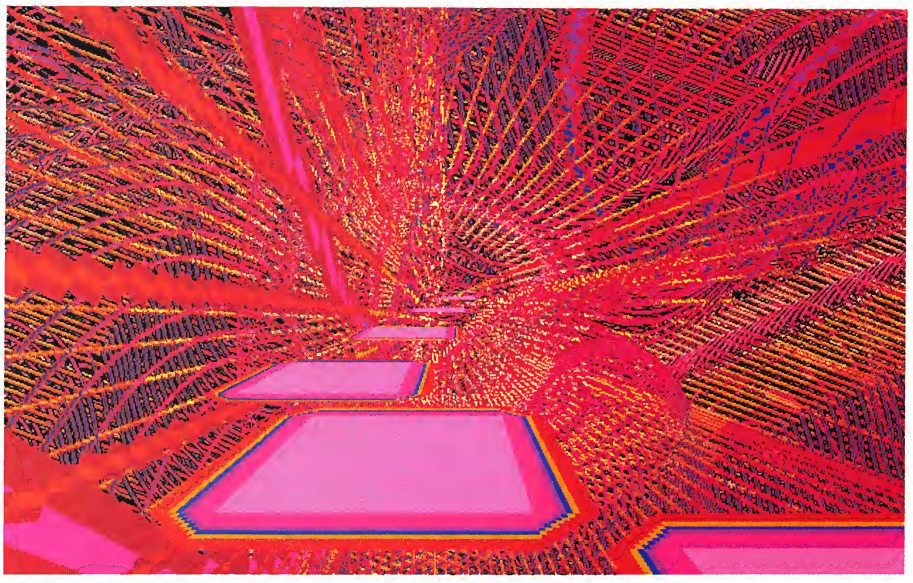
Animbrushes open up another interesting realm of possibilities as well. They will continually change as they are stamped down, making them a natural tool for Semi-Automatic painting. Construct or load your animbrush first, then set it into action with the move requester.

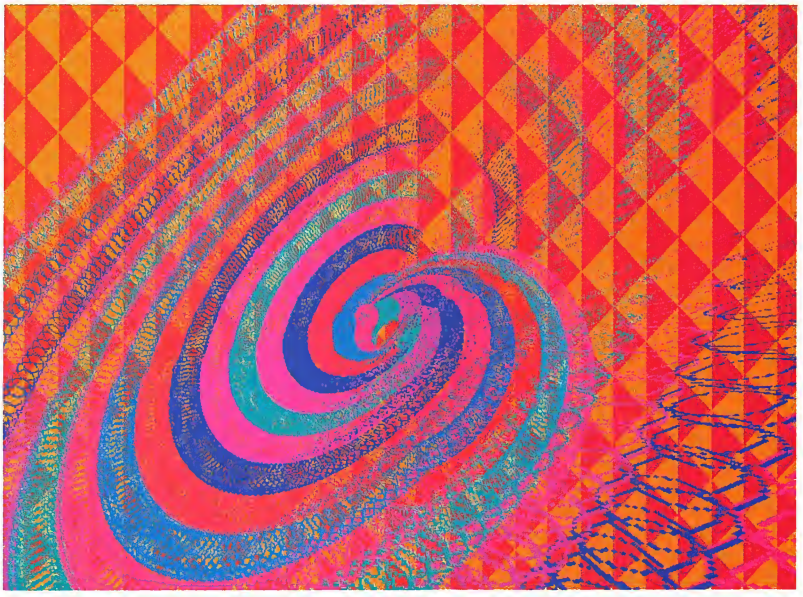
If you have followed so far, you can see that the basic reason that S-A painting works is

that the Amiga is stamping a brush and shifting hundreds of times on a single frame using animation tools, creating patterns that would be almost impossible to draw otherwise. Once you understand that, it's time to move on to Semi-Automatic animation.

Follow the above steps for S-A painting, but add one more simple step. Set a low number of animation frames, such as 10-30. Set your COUNT number (from MOVE) to a high number, maybe 300 or more. This will cause the brush to "overlap" the frames. As before, you may experiment with any positive or negative numbers in the DIST and ANGLE boxes, testing with PREVIEW. S-A Animations often give the illusion of a much greater number of frames than they actually have, due to the eye following the brush throughout the overlapping.

Though I've spent over a year developing and experimenting with Semi-Automatic painting and animation techniques, it's probably just the tip of the iceberg. It does not take the place of true drawing skill or "Real Art," but it does feature elements of creative control and unpredictable accident. It will be interesting to see what others with different methods will do to further develop this strange technique.





Two common problems surface when testing the brushes. First, the brush can spend much of its life off-screen if the coordinates are set incorrectly. Second, if the brush gets "too close" to you, it will cause large "jaggies".

Mirrored Ghost Images

Now that you are a Semi-Automatic Expert, are you ready for one more interesting technique? This will work for any IFF picture, but it's especially effective on cycled S-A paintings. It gives your painting the illusion of transparency and more colors. Once you have your picture saved, press "j" for a spare screen. Clear it to white. Select the background color that was on your picture screen as your current paint color. Using magnify, stamp down two pixels catty-cornered from each other, like two little stairsteps. Pick up this tiny 2x2 checkerboard, being careful to not pick up anything else. Click on the Filltool with your right mouse button to bring up its requester. Click FROM BRUSH and you should see the pattern window fill with your checkerboard texture. Now swap back to your picture screen and select the Filled Rectangle tool. Starting at the top left corner, drag your lacey pattern all the way across to the bottom right of the screen. The screen will dim as the checkerboardfills it. Now pick up the whole screen as a brush ("Pull harder, Agnus!"), and press "x" to flip it horizontally. Stamp it down to fill in the background checks, and hit Tab to cycle. Voilà! Now do you believe in ghosts?

•AC•

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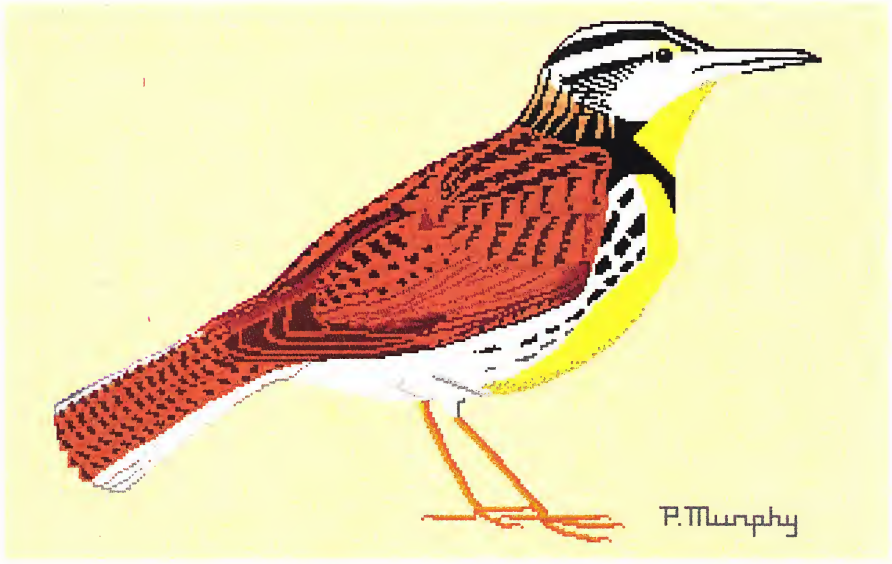
Screen Photography

An inexpensive method of sharing computer graphics

by Patricia E. Murphy



A picture is worth a thousand words, but only if it is pleasant to look at, has a meaningful message, and has graphic resolution fine enough to complement the subject matter. Screen photography offers all of the above so that you may share your latest masterpieces with the world in hardcopy form.

Amiga users have been producing high quality graphics for some time, but have not been able to display their talents in hardcopy form without going to the type of printers, copying techniques, or devices that are usually not found in the average homes. Most of our printers just do not do justice to our creations. Many of us have been waiting for high quality affordable printers, but prices are still pretty high. Instead of storing your favorite graphics on disks waiting for a time when you can share them with others, try photographing them. This might be the time to get out your personal camera and try shooting a few frames. Photographing the screen allows the user to reproduce images at a resolution equal to WYSIWYG (What you see is what you get). With some trial and error and a few tips, anyone can be sharing their best computer creations in very little time.

To get started, you will need a camera with interchangeable lenses. You can get very good results from using a 35mm single lens reflex camera and a tripod or firm support. A fixed lens camera will work, but lenses around 50mm to 100mm work best. You will want a lens that can focus at your chosen distance from the screen. This usually isn't a problem as most general mid-range lenses focus at about twenty inches and beyond. Of course, some special close-up lenses focus up to just a few inches. The object is to be able to eliminate the monitor borders, unless you want them in your picture. You must also remember that some cameras usually show a little more subject matter in the picture than what shows through the viewfinder, so you will want to allow for that by closing in on your subject a little tighter.

Above and Top: Screens created and shot by the author. The pictures are of a meadow lark and a swan.

Next, you will want a camera that has manual controls of aperature and shutter speeds. An automatic camera will not work well unless it has manual overrides, because you will need to keep your aperture setting at around f-5.6 and your shutter speed around 1/8 of a second. The slow shutter speed is important because the screen is in constant rotation of the three primary screen colors. All three of the rotations must be captured in the picture to get the proper color and contrast. These rotative passes are going on all of the time and even though the human eye cannot separate them, the camera can. A shutter speed of 1/8 of a second seems to work with just about any monitor, but you can experiment with any of the variables. Some cameras are very successful with faster speeds.

The film choice is just as important as the proceeding information. If you want black and white pictures, you should probably start out with a film like Kodak Technical Pan film, by Eastman Kodak, Inc. The film can be set at a variable of ASA ratings, so you must inform the lab processors which ASA rating you used, and tell them to develop for maximum contrast. The best setting for this film to get the best contrast would be ASA 200. If you want color reproductions, your best choice would be a slide film like Kodak's Ektachrome 100 or 200. You may also use the slides to create prints if you wish. Slide film is more precise and you have maximum control over your results, which is not the case with print film.

Lighting, as in all photographic work, is critical. In this case, it is fairly simple. The room should be as dark as possible with no light coming through windows or under doors, etc. You must try to eliminate all reflections off the screen for the best results. A tripod or sturdy support will be needed to hold the camera still. Not too many photographers can hold a camera still at 1/8 of a second. The average hand-held camera speed for a steady hand is about 1/30 to 1/60 at best. If you have a cable release for the camera's shutter, use it to avoid excessive movement. If you don't have a cable release, you may use your camera's automatic timer, if it has one. This works fine with still frames and helps to prevent accidental movement when depressing the shutter release by hand.

You might try using an ultra-violet light (UV) filter in some situations, but you will have to experiment. If you are really into photography, you can experiment with many types of special effect filters. Double exposures always offer interesting effects. Whenever you try to photograph graphics from white paper, you must use the (UV) filter or the results will have a bluish cast with certain slide films.

Most of the graphics that you want to take will probably be stills, so movement probably won't be a problem. If you want to take a picture of a screen that may move, you could try to pause it or try using print to screen to stop it. There are certain computer programs available which will freeze or grab whatever is on the screen so that you may save it. Taking pictures from the TV is much more difficult, since the screen refreshes 60 times per second. You should try a shutter speed up to 1/30 of a second for TV, but you will have to experiment to avoid blurring.

One of the best ways to insure better pictures, is to bracket your settings. This means that you must take more than one picture of each subject with different exposures. As an example, you might take one picture at an aperture of f-5.6 and a shutter speed of 1/8 of a second, and then bracket your aperture one or two settings each way at f-2 and f-4 at one end, and f-8 and f-11 on the other end. You might also want to bracket the shutter speeds by bracketing in the same fashion. There are many possible combinations and after you become familiar with the technique and take several pictures under the same conditions, you will learn approximately what works for you.

Because you will want to give explicit instructions to the processing lab, you will want to find a place that will follow your instructions and will give you results to your satisfaction. There are many professional labs that develop film according to your specifications or crop pictures if necessary for you. There are several mail order labs that are also good, but you will have to call them first if you are not familiar with their work. Most one-hour labs usually must send out slide film, and black and white film, so you will not gain time with them. If you work with the same lab most of the time, then you most likely will pay only for the work that they develop to your satisfaction.

Computers can produce some very interesting results with several of the graphic programs that are available today. Now you can share some of your best creations by photographing them from the screen and sharing them with others in a form that has acceptable resolution and appeal. No longer do you have to downgrade your efforts by trying to reproduce them with a dot matrix printer. Although some dot matrix printers duplicate graphics fairly well, they never seem to do the picture justice. Photographing screen images will give you a photographic print or slide that can be utilized in many ways. Slide presentations, video applications, or printed media can then be made from your reproductions. Screen photography offers one more avenue for creativity which might prove to be a lot of fun and can be very rewarding.

•AC•

The room should be as dark as possible with no light coming through windows or under doors. You must try to eliminate all reflections off the screen for best results.

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1.>cli directory

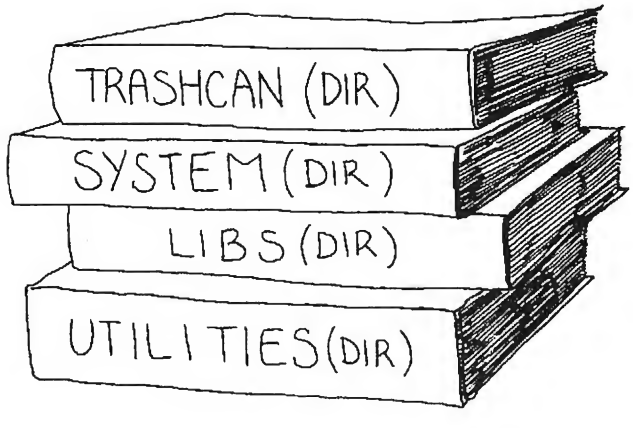
by Keith Cameron

1.> IN RECENT ISSUES of Amazing Computing, I have discussed various concepts of using the CLI (or Shell), ranging from the value of using the CLI rather than Workbench, to how to use the RAM disk more efficiently. Now that Christmas is over and there are some new Amiga owners out there, perhaps it would be useful to back up a bit and look at some basic principles of using the CLI.

As I have indicated in recent articles, I strongly feel that every Amiga user should at least be familiar with the CLI. In the November issue, I outlined its advantages over Workbench. This is in no way intended to demean Workbench, though, for it is easy and fun to use that intuitive environment. Some newcomers, however, have a tendency to rely only on Workbench, and therein lies the problem. If you use only Workbench, you are not using your Amiga completely.

Admittedly, the CLI is more difficult to use than Workbench: there is more information you must remember, you must type in commands rather than use the mouse, and the environment is not as attractive. The extra effort needed to use the CLI, though, is well rewarded with extra power and other benefits. This is probably a good time to point out that CLI, Shell, and AmigaDOS are virtually the same, so don't let the terminology fool you. AmigaDOS refers to the actual language used to communicate with the computer, while CLI and Shell are two environments that allow you to use AmigaDOS.

To start, boot your Amiga using your Workbench disk as you normally do. As always, be sure that you are working with a backup copy and not the original copy of Workbench. Once it is booted, open your Workbench by clicking on the disk icon. From here, double-click on the System directory. Next, double-click on the CLI icon. You now have the CLI window open and are ready to work. Resize the window so that you will have the full screen to work with.



Let's examine what we have done thus far. To open the CLI window, we first had to open the Workbench disk, then the System directory, and finally click on the CLI program icon. It is impossible to go directly to the CLI icon from the disk icon when using Workbench, for there is a set route that you must follow to get there. This route is called a path, or pathway, and pathways are extremely important in AmigaDOS. In fact, for people with little or no computer experience, this is a complicated concept to understand, but a very necessary one. When using Workbench, we better understand that the computer can only work with programs that we are able to see on the screen. We have more difficulty understanding this when the icons are gone, though.

Let's compare what we have done on the Workbench to this point with how it would be done via the CLI. If we were operating from the CLI already (you can, by the way, reconfigure your Workbench disk to boot to the CLI rather than to the Workbench), we would start by opening the disk to its root directory, which is the same thing as you see when you first open the Workbench disk. To do so, type

```
DIR DF0: <RETURN>
```

at the 1>, which is called a prompt, and you will get a listing of all files and directories at the root directory of the Workbench. Here is that listing for version 1.2:

```
Trashcan (dir)
c (dir)
Demos (dir)
System (dir)
l (dir)
devs (dir)
s (dir)
t (dir)
fonts (dir)
libs (dir)
Empty (dir)
```

```
    tc (dir)

    Utilities (dir)

    Expansion (dir)

.info                       Clock

Clock.info                  Demos.info

Disk.info                   Empty.info

Expansion.info              Preferences

Preferences.info            System.info

Trashcan.info               Utilities.info
```

The first thing that might strike you is how much more is exposed from the CLI than from Workbench. As I have expressed before, this is a major reason for using the CLI more frequently. There are many programs that are just not available from Workbench. Notice also that all directories are listed first (with "dir" written to their right in parenthesis), followed then by files. In AmigaDOS, you have two types of instruments: directories and files. If you use Workbench frequently, you might call directories "drawers" due to the icons. If you look closely enough, you will notice that the directories that appear as icons

> The extra effort needed to use the CLI is well rewarded with extra power and other benefits.

on Workbench start with a capital letter in AmigaDOS. Since AmigaDOS does not distinguish between upper- or lower-case letters, this distinction is merely for the convenience of users.

You will also notice that all of the directories or files that are visible in the root directory of Workbench appear twice in AmigaDOS. The first time, the instrument appears either as a directory (with "dir" written beside it) or as a file (with nothing written beside it). The second time each instrument is written, it ends with ".info". This second instrument, for example "Clock.info", is actually a separate file, which is the icon itself. If you were to get a reading of the size of these files, you would see that most of them are about 1,000 bytes. In order to be visible from Workbench, a file or directory must have a separate .info file. If you want to experiment, delete the .info file from one of the directories, such as the Empty directory. You can do so by typing

```
DELETE DF0:EMPTY.INFO <RETURN>
```

Now go back to your Workbench and you will notice that the icon for Empty is gone; however, the directory itself is still there, and files can still be stored in it, but only if you use the CLI. By not using these icons, you can save a little space on your disks and a little RAM in your memory. For A500 owners with only 512 K of RAM, this can be useful. Also, on a disk with 20 icons, you can create enough room for several small programs simply by deleting the icons. If you want the Empty icon back, simply copy one of the other drawer icons and rename it Empty.info. You can do so by using only one command:

```
COPY DF0:SYSTEM.INFO TO DF0:EMPTY.INFO <RETURN>
```

Next time that you look at the root level directory from Workbench, you will see that the icon is once again there. To return to our project, we next need to enter the System directory. From Workbench, we simply double-clicked on the System icon. This forced us to follow a path. In AmigaDOS, we must follow the same path, but we do it by typing rather than by clicking. So, this time, type

```
DIR DF0:SYSTEM <RETURN>
```

and you get the following listing:

```
.info                       CLI

CLI.info                    DiskCopy

DiskCopy.info               FastMemFirst

FastMemFirst.info           Format

Format.info                 GraphicDump

GraphicDump.info            IconEd

IconEd.info                 InitPrinter

InitPrinter.info            NoFastMem

NoFastMem.info              Say

Say.info                    SetMap

SetMap.info
```

Once again, you will notice all of the ".info" files, which indicate that every file in this directory is accessible from Workbench, for each one has an icon. If you were to run one of these programs from AmigaDOS, you would have to type the entire pathway:

```
RUN DF0:SYSTEM/FILENAME <RETURN>
```

FILENAME in this example, of course, can represent any of the programs. If you want to run one, I would suggest IconEd. The slash is used in AmigaDOS to separate directories and files, or directories and other directories. The colon (:) is used to separate a disk (sometimes called a volume or drive) from directories and files. These punctuation marks are extremely important in pathways, so be sure to include them.

If you had used the CD command (discussed in the December issue), you could make the System directory your current directory by typing

```
CD DF0:SYSTEM <RETURN>
```

Then you would only need to type

```
RUN FILENAME <RETURN>
```

to run the program. The RUN command, by the way, should be used when running programs to allow for true multitasking. Although programs can be run simply by typing their name, it is advisable to use RUN, as this returns control to the CLI. To study pathways further, examine the diagram of a partial Workbench disk. (FIG 1.)

The purpose of the diagram is to help you visualize pathways. If your current directory is the root directory and you want to use the calculator, you have to tell the computer exactly where the program is; that is, in the Utilities directory. Otherwise, it will simply search through the current directory for the program. Why can't AmigaDOS look through all of the directories? Well, it can, with some adjustments on your part; but, as is, you must type in the pathway. One advantage of this is that you can have files with identical names in separate directories. For example, you could have two calculators, one in the Utilities directory and another in the System directory. The one in the Utilities directory is rather basic, but the one you install in the System directory can be one that does various advanced operations. Since both have the same name, which does AmigaDOS run? That's the good thing about pathways. This advantage really becomes clear when more than one person is using a single computer. If each has a directory, they can use the same names unknowingly without causing problems, such as overwriting each other's files.

Does the Workbench seem easier and faster? Let's see. On my older Amiga, to open the disk, then the System directory, and finally start IconEd requires about 20 seconds. I arrived at this time very unscientifically by starting a stop watch when I first double-clicked on the Workbench icon and not stopping it until the green drive light on my computer went off after opening IconEd. In contrast to this, I only needed about 8 seconds to start the same program from the CLI using the commands discussed above. Time is saved by not having to wait for windows to open before proceeding. Using Workbench, you would have to wait for the Workbench disk to open before opening the System window; then you would have to wait for that window to open before clicking on the IconEd icon. Now, before you Workbench advocates start sending in those cards and letters of protest, please remember that this is in no way intended to be a scientific test. I am a fairly fast typist and can type the necessary command line rather quickly, but other people may require the entire 8 seconds just to type in the command line. However, this does demonstrate to some degree an instance when AmigaDOS can be preferable. Yes, you have to know the pathway prior to running the program, and you have to remember the specific names of files to save time. But, once again, you don't have to wait for the window of a directory to fully open before you open a file or another directory in it.

Let's cover one more item. Go back and look at the files in the System directory. Do you notice how two or more words often seem to be shortened and put together to form one word? Have you considered why this happens?

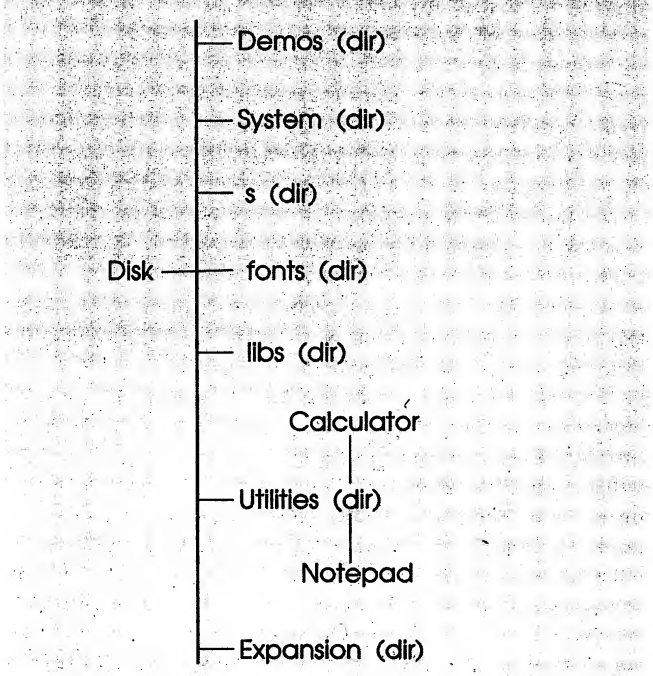
In AmigaDOS, it is more convenient to use single word names for items. Let's do an experiment to demonstrate this. Make the System directory your current directory by executing the following command:

```
CD DFO:SYSTEM <RETURN>
```

Once you have done this, rename IconEd to its real full name, which is "Icon Editor". Be sure to leave the space in between the words.

```
RENAME ICONED ICON EDITOR <RETURN>
```

Figure 1: A diagram of a partial Workbench disk.



The drive will spin momentarily and then an error message will pop up below the command saying something like "Rename: Bad positional argument". Now what does that mean? Before answering, let's try something else. Go to your Workbench, open the System directory, and try renaming the same file "Icon Editor" by using the menu bar of Workbench. Now what happens?

No problem for Workbench, right? That's because Workbench is programmed to handle spacing between names, unlike the CLI. There is a way to get around this on the CLI, though, and that is by using quotation marks.

Go back to your CLI window now and type the following:

```
RENAME ICON EDITOR ICONED <RETURN>
```

You should get the same error message you had a moment ago ("Rename: Bad positional argument"). Now try the same command using quotation marks around the name that uses more than one word.

```
RENAME "ICON EDITOR" ICONED <RETURN>
```

This time the drive spins, then the prompt on the next line appears, indicating that the command has been successfully executed. If you get a listing of the directory, though, you will see a slight problem. Type

```
DIR <RETURN>
```

and all of the files in the directory will appear. You will see that "IconEd" is there, but "Icon Editor.info" is also there. In fact, if you go back to Workbench and look in the System directory, you will see the Icon Editor icon still present. Click on it to see what happens.

The screen should flash, indicating that the file can not be opened. When you rename something from Workbench, both the file (or directory) and its icon are renamed. However, from AmigaDOS, only the file or directory is renamed. So, from AmigaDOS, you will need to type

```
RENAME "ICON EDITOR.INFO" ICONED.INFO <RETURN>
```

in order to rename the icon to make it match its file. This time, everything should appear in order.

For the convenience of all users, most programs will have names without spaces. To indicate where one word ends and another begins, several methods are used. On the Workbench disk, for example, a capital letter indicates where another word begins, such as in IconEd (Icon Editor) or InitPrinter (Initialize Printer). Some people use the underline key from the keyboard to indicate spacing, as in Icon_Editor or Initialize_Printer. This allows the full name to be used for clarity. Other people use a hyphen, for example Icon-Editor or Initialize-Printer. Of course, slashes (/) and colons (:) cannot be used, as AmigaDOS interprets these as symbols to separate volumes, directories, and files.

To be able to use the CLI well, it is imperative that you understand pathways, the use of quotation marks to overcome spacing, and that .info files indicate icons. In my next article, we will alter the startup-sequence of your Workbench disk and customize it specifically for you.

• AC •

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PROGRAMS THAT WORK

PART 1: GRAPHICS AND LOGIC

by Dave Spitler

Those of you who have seen the *Star Trek Trivia* PD game may have wondered how difficult it would be to create a program like that. STT combines a polished look and a solid feel which is not often found in a PD game. No one who plays Star Trek Trivia can doubt that hours of effort went into its creation. What may not be quite so obvious is that most of those hours were spent compiling the thousands of questions and answers which make STT so addicting and not on the mechanics of the game itself. If you are familiar with any of the popular authoring systems, you can lay out the skeleton of a program like this in a matter of hours. The version of Star Trek Trivia which I saw was done with The Director, but AmigaVision, CanDo, HyperBook, or Foundation might have done just as well.

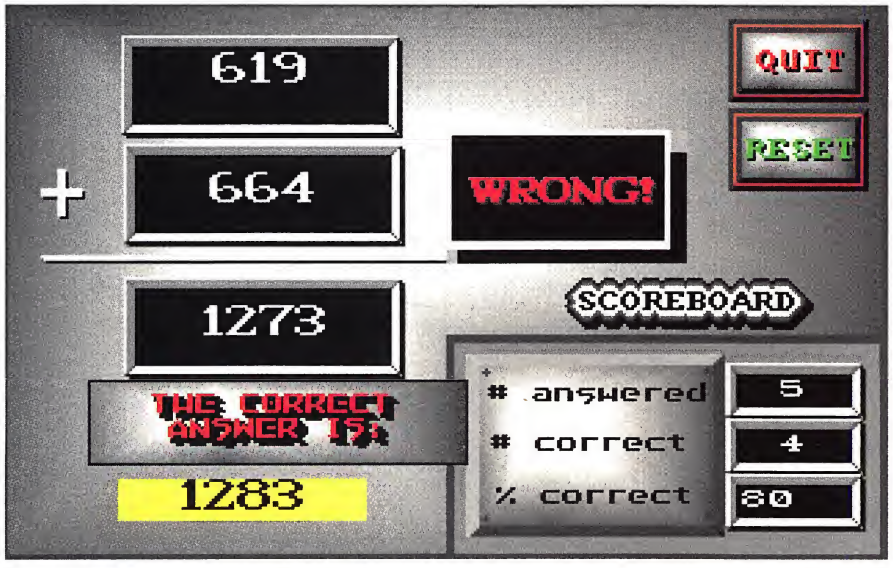
The program is composed of three parts: graphics, logic and data base. All of these parts play an important role in the final product as we shall see.

GRAPHICS: the first thing a program user sees. Most users make some basic decisons about a program based on how it looks. Graphics must be well done and appropriate to the task.

PROGRAM LOGIC: the glue that holds everything together. The program must execute in ways that are both predictable and repeatable.

DATA BASE: a program like Star Trek Trivia, depends on questions and answers which are organized into data bases and accessed from the program.

During the remainder of this article, we will look at graphics, organization, and logic. We will examine the data base in a later article. The program examples I will use are based on Amiga Vision flows and The Director scripts because I feel that these programs do a better job of following traditional programming structure. If you use CanDo, Foundation or Hyperbook, the principals remain the same even though some of the mechanics are different.



The graphics for this program are not complicated. All that is needed is an interface screen, someplace to paste the numbers and scores.

Let's begin by looking at a simple quiz program which manipulates numbers. This program is part of the addition module from a larger program I call "MathDrill" which presents the user with a problem and records the answer. The program judges right or wrong answers and keeps overall scores.

The graphics for this program are not complicated. All we really need is an interface screen—someplace to paste the numbers and the scores—but larger programs require more screens and this leads to considerations of program execution and memory. In most cases, your program will execute better with imported painted IFF screens from a paint program rather than the internal graphics tools provided by the authoring system. This is because your program has to re-draw the screen as it steps through its instructions. The delay while the computer refreshes an internally created graphic piece by piece is distracting and irritating.

If your program contains a lot of graphic screens, size quickly becomes an issue. Your programs run leaner and faster when you use brushes to change existing screens rather than providing whole new ones.

Lastly, consider the way your program will look to the first time user. Lo-res "quick & dirty" graphic screens are OK during development, but the final version should have well executed high or medium resolution screens.

The logic part of our program will be fairly simple. You can do it if you are familiar with three concepts: variables, "IF" statements, and loops.

Understanding variables is crucial to most programs. A variable is just a symbol whose meaning changes. The "x," "y," and "z" we encountered in high school math are variables. You can continually redefine "x" or "y" and combine them if you want to get a new "z." Variables are used to help control the program as well as to capture and save user responses. We will see just how powerful this concept can be, especially combined with "IF" statements.

"IF" statements are the conduit which makes the logic flow. Think of a menu which offers four choices. When the user selects an option, you have to translate this into action. You do this with an "IF" statement which says: "If box number 1 is clicked, do this." In Amiga Vision, you pull an "IF-THEN" or "IF-ELSE" icon onto the screen and type a statement into it ("response()==1"). Director scripts use a line

of text which begins with "IF" and contains a "THEN" somewhere. Three actions are possible with an "IF-THEN" statement: you can start a series of actions immediately, you can send the user someplace else in the program, or you can use a variable to record the choice for future use.

Finally, we need to deal with two somewhat related concepts, the LOOP and the GOTO. You can lock out unwanted actions and force your program to do repetitive tasks though use of a loop. When a program encounters a loop instruction, it executes the instructions within that loop until something allows it to move on. You can even "nest" loops within loops. I said that "GOTO" statements are somewhat related. This is because you can use a GOTO statement to return to an earlier part of the program, creating a loop. Be careful with GOTO's, however, lest you wind up with a program so strewn with quick fixes that it looks like (and exectutes like) a plate of spagetti.

Now let's go ahead and create our program. To begin with, we will not ask for user input. We will just construct a program which can think up problems and answer them. To make things more interesting, we will introduce an element of error and have the program keep track of those errors when they occur.

Before we can go very far, we need some variables. We want one for score and one for the number of questions answered (so that we can figure percentage). We want the questions to have some variety, so we will have the computer choose numbers with its random number generator. Thinking of the familiar formula of x + y = z, we will have the computer choose x and y at random and then have it calculate z. We will also create a variable called "a" to represent the user answer and a variable which we will call "err" which we will use to cause our program to make mistakes once in awhile. We will begin by establishing a painted screen with windows on it for all of the various numbers to be displayed, and immediately following that, we will begin our variable statements. A Director script might begin like this:

```
    LOAD 1, "DH1:Math/Pix/Input1"
:rem loads picture into memory
    PAUSEMODE 0
    LOADFONT 1,12, "ruby.font"
:rem loads font
    num=0        :rem # of questions
variable
    score=0      :rem score variable
/top:    :rem this begins the
program loop
    a=0 :rem variable for "user
answer"
    pct=0        :rem % of correct
answers
    err=?7       :rem makes error a
random number
    x=?99        :rem random selec-
tion of x
    y=?99        :rem random selec-
tion of y
    z=x+y                :rem
establishes z    (NOTE-":rem" is
used to separate remarks from the
program)
```

We will do everything from this point on by manipulating those variables. Notice that some of the variables are stated before the program loop actually begins (at the label "/top:") and some are stated afterwards. Those variables which must be reset each time the program loops must be introduced after the loop begins, while those variables which should not be reset (such as "num" and "score") must be introduced before the top of the loop. Take a look at the sample of Amigavision code from "MathDrills". The Loop Icon near the beginning of the sample forces the code which follows to come back and start fresh over and over again. In the Director script, the loop is set up by placing a "goto" instruction which points back to the "/top:" label at the beginning of the loop. Instructions which occur before "/top" will not be refreshed when the program loops but those which occur after that point will. The score variable is incremented by an "IF" statement ("IF a = z") followed by the instruction "score=score+1." The "num" variable which is counting the number of questions asked, is incremented by an instruction which says "num=num+1" every time the program begins a new loop.

> The program is composed of three parts: graphics, logic and data base.

Since we do not want to answer the same question for twenty or thirty times, we place the instructions "x=?99" and "y=?99" inside of the loop. That way, every time the loop cycles, a new random value between zero and 99 is chosen for both "x" and "y."

Look at the scrap of Amiga Vision code again. The "Variables" icon (the block with x and y on it) appears both before and after the loop icon. If you double click on these variables icons, you will find all of the same variable statements there which we set up in the first few lines of code in the Director script. The one difference is that the script looks complicated because a series of "IF" statements has been introduced to allow the user to choose one, two three or four column addition.

At the end of the program, we add an "IF-ELSE" which compares the variable "z" (the correct answer) with "a" (user answer). If a=z, one thing happens, while something entirely different happens if a and z are not equal. Finally, a series of "Wait-Mouse" icons with 1, 2 or 3 second delays will keep our program from running so fast that humans cannot keep up with it. (The same thing was done in the Director script by adding "PAUSE" statements.)

Once we have our little program up and calculating, it is a fairly simple matter to get it accept user input and place it in the "answer" box on the screen instead of the computer answer. In Director scripts, this is done with an "INPUT" statement. In Amiga Vision, this is done by selecting a "form" icon from the Data menu. Through the "object editor", the form icon allows you to establish data input fields as well as text and variable fields and place them anywhere you may need them on the screen. Remember the "a" variable? We can now use that to collect the user answer and compare that to the value of "z" (z=x+y). If a is equal to z, the user's answer is correct. If a is not equal to z, the answer is incorrect.

Now we have created two simple programs, one of which puts the user through simple math drills and one of which allows the computer to be both the teacher and the student. Can those two programs be combined in some way? You could do it through interlocking menus or by having the computer revert to the self testing "demo" anytime no student is using it. Next month, we will use a data base to expand this simple question and answer session into anything from a technical training program to a mammoth trivia game.

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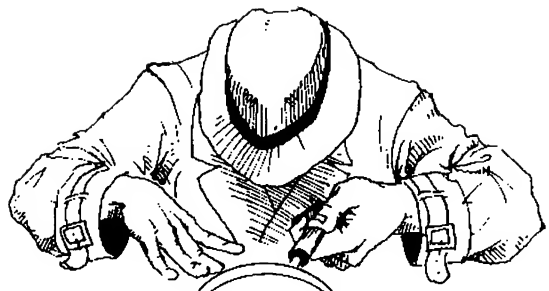

ROOMERS

by The Bandito

[These statements and projections presented in "Roomers" are rumors in the purest sense. The bits of information are gathered by a third-party source from whispers inside the industry. At press time, these rumors remain unconfirmed and are printed for entertainment value only. Accordingly, the staff and associates of Amazing Computing *cannot be held responsible for the reports made in this column.]*

The Wacky World of Commodore

Here's some good news about Amigas: Commodore has announced that unit sales of Amiga computers reached the three million mark in November 1991. This milestone was reached twelve months after Amiga sales hit the 2,000,000 mark in November 1990.

In case you weren't around, Amigas started shipping in September of 1985. It took three and a half years before sales hit the one million mark in March 1989. Then the two million mark was reached one and one-half years later in November 1990. So obviously, the sales picture is improving. Of course, the Bandito hears that Commodore threw in sales of CDTV to add up to that three million mark, but don't worry; CDTV sales are a very, very small portion of the total—the Bandito hears as of November, only about 30,000 units. Equally noteworthy, of course, most of those Amiga sales were in Europe, not in America.

It's very interesting how Commodore's press release describes the Amiga product line; here's the quote: "The Amiga product line is comprised of the Amiga 500 and 500+ targeted at the home computing market and the Amiga 2000 and 3000 series focused on the professional video production, desktop publishing, and multimedia office productivity markets." The "multimedia office productivity" market? The Bandito would like to know the names of the pharmaceuticals being used by Commodore marketing; they sound pretty potent. Such vivid hallucinations they're having these days. Desktop publishing? Is that really a major source of Amiga sales? Who are they kidding, anyway? These marketing whizzes are finally getting around to giving up on the UNIX market. Talk about being in tune with your marketplace. Can we sell these marketing people to Atari? Just asking, mind you.

Tropic of Amiga

Here's a fun factoid for you: Commodore's official headquarters are located in Nassau, Bahamas—though the address listed is really an office of Ernst & Young, their accountants. Why would an international company whose products are sold in Europe and America, and whose chairman lives in Canada, have its official HQ in the Bahamas? Can you say "tax dodge" three times fast? Sure you can. But seriously, folks, the Bahamas are a great place for official headquarters and annual meetings. You don't have to worry about being overwhelmed by hordes of Commodore stockholders asking inconvenient questions; if they hold Commodore stock, they certainly don't have the money to head to the Bahamas. Nor will you be smothered under masses of wealthy Amiga developers eager to send their staff to the Bahamas, trying to get rid of some of the massive profits they've made selling Amiga add-on products. No, the Bahamas are a quiet, restful place for annual meetings... at least, usually. But 1991 was different.

Commodore's annual meeting was attended by less than a dozen shareholders, even though it was held at a very posh Bahamian resort. The Bandito would like to salute a bold Amiga fan by the name of Dan Hess, who flew from Ohio to the Bahamas to attend the meeting. Hess put his question directly: why isn't Commodore advertising the Amiga more in the U.S.? At least Irving Gould, Commodore's chairman, gave a direct answer: they've tried it before with no success. The Amiga isn't available at enough places to make a difference in sales by advertising. That is, advertising creates demand, but then people have no place to buy it. (Compare the density of Amiga dealers to the density of IBM dealers or Mac dealers.) Sad, but true.

And the financial picture in the North American market isn't rosy. Commodore reaped 85 percent of its fiscal 1991 sales of $1.04 billion in Europe. Meanwhile, Commodore's losses in the United States and Canada grew to $24.7 million on sales that plummeted by one-third to $110.1 million in the fiscal year that ended June 30. Compare that to a loss of $17.7 million on sales of $163.5 million the year before.

Meanwhile, the European picture looks very good. International Data Corp., a market research firm, says Commodore controls 12.4 percent of the personal-computer market in Europe, behind IBM's 12.7 percent, Olivetti with 6.2 percent, Apple's Macintosh computer with 5.2 percent and Compaq with 4.6 percent.

Revenues from Commodore's line of PC clones were up 14 percent; C-64 sales were up 4 percent (as the Bandito told you before, those cheap little computers are doing well in Eastern Europe).

But despite megabucks spent in TV and magazine ads over the past few years, the North American operation continues to lose money. Commodore's got lots of excuses handy; the economy's been bad, there's not enough dealers, or people think Commodore only makes game machines. And various fixes have been tried, usually dumping the current guy in charge and cleaning out the old staff. The latest casualty, of course, was Harry Copperman, who got the boot in January to be replaced with Jim Dionne from the Canadian branch of CBM. Since then, most of Copperman's old cronies have been axed and things have been reshuffled yet again.

The whole thing puts the Bandito in mind of the old joke: The new company executive finds three envelopes in his desk, left by the last CEO on his way out. The envelopes are sealed, labeled "Open in case of emergency", and numbered 1, 2 and 3. Of course, the company's in trouble, so the new CEO opens the first envelope. It says "Blame your predecessor." So he does, and everything's all right for a while. But then things are worse than ever, so he opens the second envelope. It says, "Blame your vice-presidents." That works for a while, but then the company is really heading for the skids. In desperation, the CEO opens the third envelope. It reads: "Prepare three envelopes...".

Commodore, in the course of slashing expenses to compensate for falling sales, has laid off about 100 people and shifted most manufacturing and assembly out of West Chester to other Commodore plants. Some of the more cynical observers might wonder whether Commodore is planning to just give up on the North American market. Seems unlikely, sez the Bandito; even Gould admits the U.S. market is too big to ignore.

One issue brought up at the meeting was the rather touchy one of executive compensation; shareholders complained about Ali's and Gould's salaries. Gould earned $1.75 million, while Ali earned $2.4 million for 1991. Gould in 1989 was granted options on 350,000 shares of stock, while Ali was given 120,000 shares in the last fiscal year atop 300,000 options given previously. As a point of comparison, John Akers, chairman of IBM (50 times Commodore's size), made $2 million in salary in 1990. Say, maybe that's what's happening to Commodore's marketing budget...

So what is Commodore going to do about the whole situation? Nothing, for now. They're pinning their hopes on the new generation of Amigas, which are due to arrive in 1993.

Commodore president Mehdi Ali dropped some broad hints, but he wouldn't give any details. Once the new Amigas come out, you can expect Commodore to try all over again to sell Amigas. Here's hoping they have more success in the U.S. of A.

CDTV Update

Well, Christmas has come and gone, and CDTV did not conquer the world. Nor did CD-I; the Bandito supposes that consumers are unwilling to drop $800 on a new toy of dubious value and uncertain software, which at this point characterizes both machines. So what happens now? If you look at Commodore's past performance with hardware, you'd expect that they'd drop CDTV like a hot potato, dumping it into the dustbin of history along with the Plus/4. But the Bandito's sources indicate that Commodore believes in the future of CD-ROM, so they're going to stick with it a while longer.

Will Nolan Bushnell stick around, too? The answer is no; Nolan has already left amicably for greener pastures, starting yet another new business or two. Commodore still has a lot of resources committed to CDTV, though. But let's look at what the competition is planning.

Although CD-I sales weren't much this last Christmas, CD-I distribution blew past CDTV. You can find CD-I everywhere, whereas you really have to hunt to dig up CDTV on sale once you leave the Amiga dealership. Now the Bandito hears that Philips is trying to convince Blockbuster Video to carry CD-I titles and players for sale and rental. According the Bandito's sources, Philips has invested $100 million or so in Blockbuster, and sort of expects Blockbuster to do them a favor in return. So it looks like Philips will have the best possible distribution for CD-I players and titles.

Meanwhile, other companies have finally indicated that they will be producing CD-I players. At a recent CD-I conference, Yamaha showed a CD-I player with MIDI capability, Pioneer showed off a CD-I player that can play laserdiscs, Sony displayed a portable CD-I player prototype, and Samsung and Goldstar also announced players in the works. You might see these widgets in the stores by Christmas... or you might not. Prototypes don't mean production, and the Bandito suspects that these companies may be a little wary of committing a lot of resources to CD-I before it's a proven success. Anyway, if these companies do enter the market, CD-I prices are likely to drop. Expected prices are $500-$600 by Christmas 1992, and about $200 in four to five years.

CD-I backers are hoping that the upcoming MPEG support, supposed to be available sometime in 1992 (hah!), will make a big difference. This will take the form of some additional hardware in CD-I machines, causing a boost in price of some unknown amount. MPEG is a standard for compressing video, giving very high compression ratios. Some CD-I stalwarts believe that MPEG capability can make CD-I into a video playback device. The Bandito has to laugh at this. First of all, MPEG video quality looks like VHS tape re-recorded about four times—in other words, pretty poor. Second, why would you spend $1000 on a CD-I player with MPEG to play cheesy video with no slow-mo or freeze frame (MPEG compression won't allow this) when you could get a laser disk player for $300 and enjoy 400+ lines of resolution on inexpensive laser disks?

But it looks like CD-I is beginning to get some momentum, however glacial it may be at the moment. Philips is convinced that their sales will parallel the CD player sales curve, with exponential growth rates over the next few years. What have they been smoking over there?

Of course, the real question is: How can Commodore jump-start CDTV sales? The Bandito hears some interesting speculation coming out of West Chester. CDTV and CD-I together? Don't laugh; it could happen. Apparently, although Commodore has demonstrated CDTV displaying PhotoCD images, PhotoCD needs Philips authorization, according to some sources. What if CDTV added CD-I capability? It would still be capable of either mode. Perhaps that would give it an added edge in both markets. The licensing fee might not be too high, but the extra hardware costs might be a bit much. The Commodore CDTV/CD-I would be the only CD-I player that could turn into a real computer, and perhaps the only one with cool video capabilities (if they could get a version of the Video Toaster for it...).

But the Bandito puts the chance of Commodore adding CD-I capability to CDTV at around the same level that Commodore marketing will win an award for excellence. So the Bandito suggests positioning CDTV as the one CD-ROM machine that can be a real computer at a realistic price. Look, CDTV's big advantage over CD-I is the fact that CDTV is a usable computer. Commodore's new "computeriz-

ing" kit for CDTV is an intelligent move on the part of Big C. The kit serves to differentiate CDTV in the marketplace from CD-I. CD-I doesn't take a keyboard, can't do word processing, can't do video work, can't add a hard drive or a floppy. If the price of CDTV heads a little lower, it may still do wonders in the marketplace if it is positioned as an inexpensive multimedia computer.

So save CDTV and reposition it as the perfect home computer. It's got an enormous price advantage over its nearest competition, the MPC computers, which start at around $2500 and are still amazingly wimpy even for that amount of money. And CDTV can hook into a TV set. The computer connection is the weak link in CD-I armor; the CD-I box can't add a hard drive, keyboard, floppies, modems, and printers.

And get some action in the software end of CDTV. Get some real education oriented stuff. No, not Barney Bear (fun as that is for kids); what CDTV needs is *Cliffs Notes* on CD-ROM. *The Oxford English Dictionary. Roget's Thesaurus, Bartlett's Quotations, The Chicago Manual of Style.* Mathematics, history, science, languages. Heck, how about 10,000 term papers on a CD-ROM? This is where CD-I misses the whole point. Yes, it's nice to be able to look at pictures and hear sounds. But what about when you want to do your homework? You gotta have a word processor and a printer... and it sure would be great to have all that data handy. Imagine clip art CD-ROMs designed to help with your homework; IFF files for every occasion.

Next we need a handheld version of CDTV, perhaps in concert with the notebook Amiga. Now there's a product that could really differentiate itself. Hey, Commodore, talk to Sony; those guys still haven't quite figured out what they want to do about CD-ROM and multimedia.

The Super NES CD-ROM being developed with Philips provides a disc format that's readable in CD-I players (though different software is needed). However, the Bandito hears that Super NES sales have not been as enormous as expected; price drops were seen even before the end of the Christmas season, always a bad sign. And NES prices dropped, too; could Nintendo finally be running a bit scared? Genesis is hanging tough; the NEC TurboGrafX is the big loser even at new low price.

Slow poke

Of course, the videogame makers aren't the only ones in the CD-ROM market. The Bandito hears that Tandy is working on a low-end MPC machine—a CD-ROM with a 12 MHz 80286. Jeepers, that's slower than Commodore product development. And this blazing wonder machine is going to be running Windows. Actually, the Bandito should probably restate that, given the usual speed of Windows even on the speediest of PC clones: The Tandy machine will be "walking" Windows—or maybe crawling. Windows moves at about the pace that the FDA uses to approve drugs, and on this Tandy machine that would have been underpowered three years ago, Windows will look like it's stuck.

Oh, and by the way, this machine has no keyboard. What it does have is an under $1000 list price, and it uses a TV for a monitor (so it probably works in 320 x 200 resolution with 16 colors, knowing Tandy graphics capability). Maybe this machine can rescue CDTV; it'll make CDTV look like a veritable speed demon. Tandy has a tradition of underpowered "home" computers, but this is really going too far. It's like using a VIC 20 for ray-tracing. This will be a much more tranquil home computer—one that gives you plenty of time to think before anything happens. Great for slow-motion video games. Just think; it can run a baseball simulation that would actually take longer than the real thing!

New Hardware Sightings

Latest in the random Amiga universe news: Apparently, Commodore has slipped in a small change to the A3000. The Bandito hears that the latest shipments of A3000s have high-density floppy drives. If you put in a high-density disk, you can format it to 1.76MB! No news yet on an upgrade path for current owners, nor whether Commodore will release a stand-alone version of the high-density floppy. *[As we understand, probably not. The high-density drives happened to be what was available for installation, a fortuitous development for some new users!—Ed.]*

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The 1992 International Winter Consumer Electronics Show

The Winter CES was a big as ever, with its participants filling the halls of the Las Vegas Convention Center, Las Vegas Hilton, Sahara, and the Mirage. Attendance was lower than expected, totaling 79,094. Buyers, sellers, retailers, merchandisers, and advertisers came from every continent to see the new and wonderful products on display from electronics giants such as Pioneer, Sony, Nintendo and Commodore—yes, even Commodore.

Most attendees canvassed their respective sections of the show—stereo people with the stereos, appliance people with the appliances, and video people with the video. But just about everyone who came upon the Commodore booth stopped, even if for a brief moment to tie shoe laces, and was exposed to CDTV at its finest.

Nestled between the "Gunfight at the Panasonic Corral" and Kodak's PhotoCD was perhaps the best showing yet of CDTV and its capabilities. The Commodore booth had an abundance of CDTV units demonstrating all the already-old favorites and some of the newest CDTV titles on the market. Along with the titles came new hardware applications for the CDTV unit. A kiosk with interactive CDTV software, video editing systems, karaoke to name a few.

Two items which made the Winter CES showing of CDTV unique were a special ad and a terrific presentation. Commodore ran a full-page ad in several of the daily show guides which directly compared CDTV to Phillip's CD-I. Incidentally, CES show guides are published daily by more than one agency, amounting to several different show guides each day. The "Can vs. Cannot" comparison drew much needed attention to the Commodore product.

Commodore's other marketing breakthrough was a giant video wall that displayed a continuously running demonstration of CDTV. Every 20 minutes or so, a Commodore spokesperson would join forces with the giant screen and give a live demonstration and explanation of CDTV's features. The live demonstration drew a sizable crowd each time, much more than any other video wall in the show—with some notable exceptions: video wall/theatre seating combinations, video wall/glamorous model combinations, and the Nintendo Pavilion.

The great attention given to CDTV brought people into the Commodore booth, where one could see other great Commodore products as well as meet with Amiga-related companies and see demonstrations of other products available for the Amiga and CDTV.

Show Overall

If you are into electronic gadgets, the Winter CES was the place to be. Everything from high-tech alarm systems to Zenith Data Systems was at this show. The big companies such as Pioneer, Sony, Hitachi, Zenith, and Panasonic went out of their way to showcase their products. There were some lessons to be learned in the marketing department. R&D has taken giant leaps forward with product creation. Product design and packaging showed some interesting new looks.

Wide-screen televisions and powerful stereo sound systems teamed up to create "Home Theatre." There were especially-designed reclining chairs which massaged your body after a long day's work. There were tons of video game and home entertainment titles for Nintendo, Sega, and other game systems as

Commodore's booth was packed with curious people wanting to know more about CDTV.

Kodak's PhotoCD is an electronic photo album. Take your favorite photographs to a Kodak Imaging Center and they will digitize them and place the pictures on CD-ROM.

well as virtually every computer make on the market. There were gadgets to help you eat, sleep, drive, hear, see, speak, walk and even... well, you know. If you couldn't find it on the floor of the show, it was outdated and probably no good for you any way.

The Competition

As always, the video game market was one of the more competitive sections. Nintendo cornered the market's share of attention with its very own pavilion housing just about everyone who has ever done an NES title. Names familiar to Amiga users, such as Psygnosis, Electronic Arts Distribution, Maxis, MicroProse, Konami, Accolade, and Ocean kept the Amiga faith among the Game Boys. Companies who produce Amiga games did not experience competition among themselves but rather with the other platforms for which they develop. The Amiga titles made a fair showing. New titles from Konami, Merit Software, Electronic Arts, and MicroProse were showcased among those companies' other-platform titles.

As for competing computer platforms, PC compatibles, notebooks, and the like were abundant. Giant IBM had a good sized display. One could say that IBM's presence was felt in the number of IBM PC's that were spread out over the entire show in other companies' booths, but then again, that is just a fact of the computer industry that Commodore and the Amiga must live with, for now.

Commodore's biggest competitor at the Winter CES was not another computer manufacturer, but a large company which specializes in home entertainment products such as stereos and television sets. This was Phillips and their CD-I. As you may know, CD-I is CDTV's greatest opponent in its rise to the top. Phillips was not going to let Commodore forget they were around, either. CD-I was shown heavily, attached to big 26-inch monitors with full stereo sound and a unique track-ball-like controller, called the Roller Controller, which has been specially designed for use by children.

Phillips also proudly displayed their collection of CD-I titles, boasting of over 30 for their system.

Commodore

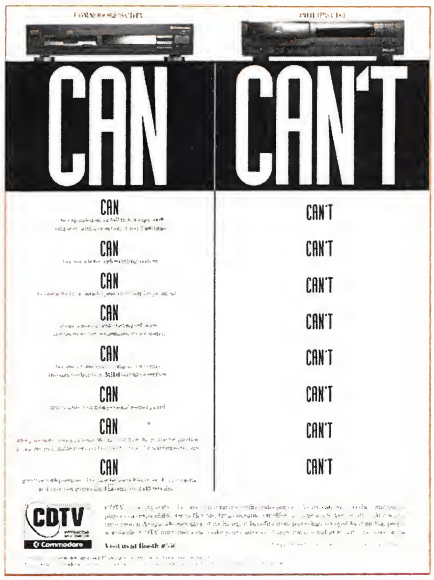
Again, CDTV was the main attraction at the Commodore booth. CDTV units boasting CDXL were running interactive CDTV disks which take advantage of the accelerated CDTV format. There was also an emphasis on CD+G, which combines Compact Disc-quality sound with sharp graphics and animation.

CDTV add-ons were also heavily displayed. The keyboard, mouse, and floppy drive kit, now being called CDTV-Professional 1500, demonstrated how the CDTV unit could instantly be transformed into an Amiga 500 home computer. Other new peripherals for CDTV include a trackball controller, video genlock, and 64K and 256K personal memory cards. The trackball controller is the perfect replacement for the standard CDTV controller. The unit is designed to increase speed and control, as well as ease-of-use. It also features dual joystick connectors which can accommodate almost any joystick.

The genlock synchronizes visuals from CDTV applications with video or live television broadcast and allows the combined signal to be recorded to video tape. The card, in effect, turns the CDTV unit into a personal video editing system.

Other new goodies from Commodore include a CD-ROM drive for the Amiga 500, the A592, which was previously termed the

The competition: CDTV vs CD-I. On the left, CD-I's titles. Phillips boasts over 30 titles for their unit. On the right, CDTV displaying VidDISC from Merit Software. VidDISC is an interactive informational environment designed as a multiple purpose tool for use in education, training and information dispensing as in a kiosk.



Can they? In this agressive ad campaign comparing CDTV to CD-I, the Commodore ad attempts to make it clear which unit can perform the best.

A690. Also shown were several of the different A500 packages available.

Booth Buddies

Commodore's booth was packed not only with CDTV and CDTV titles, but also with a host of Amiga and CDTV-oriented companies. Psygnosis was represented by the CDTV version of *Lemmings*, which, by the way, is now available for the Super NES system. GVP shared booth space with demonstrations of *Scala* and other products. Digital Creations demoed DCTV and the up-and-coming DCTV for CDTV.

The Software Toolworks, creators of the hottest new multi-platform educational peripheral, were there. They demonstrated *The Miracle Piano Teaching System*, a unique new device that, when used with your Amiga, teaches you how to play the piano. (*For a complete review of The Miracle Piano Teaching System, turn to page 18 of this issue.*)

Selectra Corporation demonstrated the Selectra VuPort, a computer/VCR interface which enables the connection of a Panasonic AG-1960 S-VHS VCR to the Amiga. The VuPort demonstration incorporated such video editing items as NewTek's Video Toaster and *AmiLink/CI* software from RGB Computer & Video along with an Amiga 2000.

CDTV titles took the spotlight. Commodore now says there are approximately 80 titles available for CDTV. If you add the expansion kit, you gain instant access to over 2500 Amiga titles as well. Tiger Media, creator of *Airwave Adventure: Case of the Cautious Condor*, showed a new version of Condor and their latest mystery suspense title, *Murder Makes Strange Deadfellows*. From ICOM Simulations there was *Sherlock Holmes Consulting Detective*, a CDTV title in which you match wits with the famous Sherlock Holmes to solve three mysteries. Context Systems was showing a forthcoming release called *The Family Circus Video Titler*. This disc allows you to customize home videos by adding scenes from the syndicated comic strip, *The Family Circus*. Other titles from Context Systems include *A Night at the Races*, a horse racing simulation and *Ultimate Basketball*, a basketball simulation. Discis Books "made reading fun" with two of their titles, *The Tale of Peter Rabbit* and *Scary Poems for Rotten Kids*, both available on CDTV. Merit Software had their existing CDTV software and new items such as *Over the Net*, a professional volley-ball game and their VidDISC interactive informational environment. The VidDISC offers users the opportunity to explore interactive visual and auditory information. Merit hopes to design VidDISC multimedia applications for corporations to be used as training and informational interactive displays.

A product which could take advantage of the VidDISC is DCI Marketing's Interactive Kiosk. The kiosk features a Commodore 1084S Color Monitor with Microtouch Screen, CDTV, and an Amiga 1011 Disk Drive. The unit is designed to serve the purpose of an average kiosk: give information, but use CDTV to convey that information to the user. The CDTV kiosk also allows for optional enhancements such as a Star SP349 Printer, a magnetic stripe card reader, laser disk player, bar code reader, telephone handset, modem, and of course, custom software applications.

From Commodore's CDTV Publishing, there was the *Guinness CDTV Disk of Records*, *Music Maker*, *The New Grolier Electronic Encyclopedia*, and a super new version of *Defender of the Crown*, created by Jim Sachs. Jim has completely redesigned *Defender of the Crown*. He has improved the graphics, sound effects, music and playability, and he did the majority of the work himself. Another new title called *NASA, The 25th Year* from Troika Multimedia is going to be interesting. The disc features a complete history of NASA and includes stunning footage of some of the more famous space missions.

A new trend accompanies CD+G for CDTV, Karaoke Discs. *Karaoke Hits I & II* and *Christmas Karaoke*, from Music Sales, were on display. Through a stereo hookup, the karaoke discs allow the user to sing along with the music as the words to the song come up on the screen. With the available genlock for CDTV, you can place live video in with the CD+G to create your own video. Keeping with music, Microdeal Limited showed several new items for CDTV. CD-Remix Version 2 allows you to re-mix your favorite audio CD or cassette tape. You can add all sorts of sounds, edit songs, or create your own versions of popular hits. Voice Master is a microphone and interface for CDTV. It supports many CDTV programs where a voice-over is possible. It can also be used with voice FX to alter your present voice or create a new one.

Research and Development

The future of the Amiga and of CDTV is always an important topic. From what was seen at the show, the future of both product lines remains promising. Over the next year, Commodore hopes to make improvements to all of its products, improvements that will enhance the ease-of-use of our favorite Commodore computers and improvements to CDTV. The further development of these products will be a definite benefit to all users and hopefully will give Commodore a marketing and sales edge over its competition. The new and improved marketing of CDTV is definitely a step in the right direction.

•AC•

At a press conference, Commodore U.S. president Jim Dionne spoke of CDTV and a promising future. Commodore sounds confident that their latest attempt to market CDTV will work.

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Circle 172 on Reader Service card.

bug bytes

The latest in tips, workarounds and upgrades

by John Steiner

product: Platinum Scribble!
re: Patch
source: EMail

Larry Diener sent EMail via Compuserve regarding a problem he encountered with Microsystems Software's *Platinum Scribble!*. He writes:

"...I have come across a bug in MicroSystem Software's Platinum Scribble! Version 3.05. The program works properly on a 25MHz A3000 using the pre-release Kickstart and Workbench 2.03 (version 36.XX). Unfortunately upon receiving the release version 2.04 software (Version 37.XX) and installing the super-kickstart, I tried running Platinum Scribble! and it loaded and appeared to run just fine. But, when attempting to cut, paste, copy, style, or otherwise use the mouse for any operation, nothing worked. I called MSS and the technician said that they were aware of the problem and were working on a patch for it.

"...There is an additional problem which may or may not be related. It occurs when taking advantage of horizontal overscan—there is a toggle on V3.05 under the preferences section of the program. It seems that depressing the RM button causes the entire screen to shift to the right by approximately one column. When the button is released, the screen returns to normal. While this is not destructive, it is extremely annoying. A simple work-a-round is not to utilize the horizontal overscan feature of the program."

I contacted MSS technical support, and received a reply from Andrew Apold, their technical support adviser. He acknowledges the problem that Mr. Diener has, and they have a fix for it. If you are having problems with version 3.05 under release version 2.0 Workbench, you can request a repaired version. The fix is available as a patch, which MSS will provide over the phone to anyone who is technically oriented. The patch is also available through the MSS BBS system (407-790-0774). To whose who do not feel confident with patching their software, they can send in their master disk and $9.95, and MSS will apply the patch for them. For anyone like Mr. Diener who already paid the $9.95 to receive a version 3.05, the patched version will be available at no charge. All new disks are going out properly patched. With regard to the screen shift noted by Mr. Diener, Mr. Apold pointed out that this is a feature of version 2.0 Workbench. If a user presses the RM button when running overscan, the screen automatically returns to non-overscan mode to ensure that all menu options are visible and accessible to the mouse. I have noted the screen shift in several applications, and though it might be annoying to some, I especially like the feature when using *DeluxePaint* in overscan mode. It makes accessing menus much easier.

product: ATonce
re: Workaround
source: Phone contact

Last month, I commented about problems that a reader was having with his A2000 that occurred when using *Pagestream* in combination with a GVP accelerator and HP Laserjet II printer. Robert Miranda, a technical support staffer from GVP, called to comment that he is puzzled by the bug report. He commented that they have received no complaints from others using that same combination of hardware and software. He also noted that their marketing department uses an A2000 with the GVP Series II 33 MHz board, and an HP Laserjet IIP to create Pagestream-generated newsletters. They also have at least one other similarly configured system and are not having problems. He suggested that our reader check for the possibility of a defective printer driver or possibly a hardware problem with that reader's parallel port.

While on the phone, Mr. Miranda also commented on a bug fix he came across for those people who have an ATonce card from Vortex. The symptoms include unstable operation after booting, or the system hangs during the memory test function upon power up. The problem can be corrected by changing a capacitor on the Vortex board. According to Mr. Miranda, capacitor C3 on these problem units is rated at 270 pf. That value of capacitance should be increased to 490 pf. The capacitor is surface mount technology, and requires replacement using proper surface mount component handling techniques to avoid damage to the ATonce board. If you are not equipped to remove and replace surface mount components, take the unit to a properly equipped technician to prevent further problems.

product: V2.1 SetClock
re: Workaround
source: Mail

Last month I received a letter from Pete Guerin of Seattle, WA, regarding the ICD AdRAM-540 board for his Amiga 500. As I mentioned, he has found that the real-time clock appeared to be highly unreliable. He had read in an earlier "Bug Bytes" about being sure to use version 1.2 of SetClock, as that made the clock more robust. Pete got the opinions of a couple of acquaintances who are electrical engineers, and they provided a solution which included pulling the write-enable line from the clock chip's socket and hard wiring a switch to that line to ensure that the clock is set only specifically when desired. He also complained of a corrosive residue he found on the board that he thought was left there by the manufacturer. I promised that I would find out more details on his hardware correction before I published the details. I wrote to ICD and asked about these problems and Chris Edgin of ICD Technical Services replied: "Mr. Guerin was correct in assuming that he should use the v1.2 of SetClock to cure his battery-backed clock problems. We have discovered that it is a possible bug in the 1.3 and 1.3.1 version of SetClock. Setclock versions 1.3.2 and higher have been fixed. The next step is to enter the CLI and type 'SETCLOCK RESET' then go ahead and set the clock through preferences. This should clear up his clock problems."

Mr. Edgin does not recommend the hardware repair suggested by Mr. Guerin as

version 1.3.2 SetClock fixes the problem. The powdery substance referred to in his letter is not any kind of corrosive residue, but flux residue left from the soldering process; it is not harmful to the circuitry. board. Mr.Guerin also asked about a low-level format utility for MFM drives. His MFM drive is being driven by a Commodore 2090 controller. He has tried several alternatives, none of which are capable of a low-level format. Commodore Express was not able to help either. If you have some expertise in this area, and would be able to provide information or a source for a utility such as this, let me know; I'll pass it along in a future column.

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product: GVP Accelerator/SCI Combo
re: Workaround
source: Reader mail

Terry Morris of Carlsbad, CA, writes to help keep others from having a problem that is as frustrating as the one he encountered when he added a GVP Accelerator/SCSI combo card to his system. He hooked up his Fujitsu 130MB internal drive and his 44MB Syquest external drive to the system—an Amiga 2500—and began to have problems almost immediately. The internal drive kept giving him errors, even though he tried reinstallation, low-level format, bad block remap, and DOS format. The errors are false, never show up in the same spot, and are never fatal—clicking on retry works every time. The problem became markedly worse when he upgraded to the release version of Workbench 2.0. The only thing he could do that stopped the false errors on his Fujitsu drive was to disconnect the Syquest drive. GVP provided several suggestions of things to try, and his local dealer also made several suggestions to no avail.

"After two weeks of hair-pulling trial and error, I made one last call to GVP hoping to exchange the board or get my money back! I reached Bill in technical services, who told me to try one last thing first, to remove the terminating resistors in the SyQuest drive and it worked." Drive termination appears to be one of those "voodoo" sciences wherein there is much mystery and false information flying around. If you have some expertise in this subject, it's time to enlighten the rest of us.

---

product: MegaChip 2000
re: Incompatibility problems with SCI Controller, ATonce
source: Reader mail

Vincent Zahnle of Mt. Holly, NJ, writes with a problem he is having with multiple third-party products installed in his A2000 system. He recently upgraded to an A2000 and moved the AToncе board from his A500 using Vortex's A2000 adapter board. He then added an IVS GrandSlam multifunction card with a Quantum 105 LPS SCSI drive, which co-existed without problems on his AToncе-equipped A2000. His problem began when he added DKB's MegaChip 2000. His hard disk went awry, and when he reinstalled the old Agnus chip, his hard drive data was trashed. Since both GrandSlam and MegaChip worked with the AToncе separately, he assumed the conflict was not related to the AToncе. He called DKB and wrote IVS, and got a report from DKB that a handful of others had complained of a conflict between the GrandSlam and the MegaChip boards. He then added a GVP Combo 33 accelerator card, planning to use its SCSI controller instead of the controller built onto the GrandSlam. He reinstalled the MegaChip when the GVP controller all of a sudden generated puzzling messages that related to the AToncе card. Nor could the controller locate DH0:. He pulled the AToncе card, returned it to his A500, and all of his conflicts between the MegaChip and SCSI controllers disappeared. If you have a MegaChip, SCSI controller, and an AToncе board which all live together in harmony in an A2000, pass the information along. Mr. Zahnle also commented that he found an MS-DOS mouse driver for his AToncе from a BSR software bundle that he bought through the DAK mail order catalog. The mouse driver works fine with the Gem programs that were provided in the DAK promotion.
[Anyone interested in the mouse driver or other products, contact DAK at:
8200 Remmet Ave.
Canoga Park, CA 91304
800-325-0800
—Ed.]

---

product:PCMenuSpeak
re: For visually impaired
source: Mail

I received a letter and a disk from Brian Moats of Polyglot Software. The disk contained a program which he thought would be of interest to Robert Beltz, the visually impaired Amiga owner who spoke of a need for products that would be of assistance to those who are similarly handicapped. In "Bug Bytes," V 6.12, Mr. Beltz mentioned another product which apparently will never be completed. Mr. Moats' background utility uses the Amiga SPEAK: device. The program is called PCMenuSpeak, and it allows the user to browse through menus from the keyboard and have the menu, menu-item, and sub-item text spoken. In addition, it lets the user run the program menu items from a keyboard similar to the way IBM PC menu choices work. He usually sells the program for $10 but asked me to pass it to Mr. Beltz. Others who might be interested in the program can contact Brian Moats at:

Polyglot Software
884 W. Melrose Ln
Boise, ID 83706
(208) 336-4583

By the way, I'd like to thank each of you who have written in with solutions to fellow Amiga users' problems. Your input is certainly appreciated.

If you have any workarounds or bugs to report, or if you know of any upgrades to commercial software, you may notify me by writing to:

John Steiner
c/o Amazing Computing
Box 2140
Fall River, MA 02722

...or leave EMail to
John Steiner on Portal
73075,1735 on CompuServe
Internet mail can be sent to
JohnSteiner@cup.portal.com

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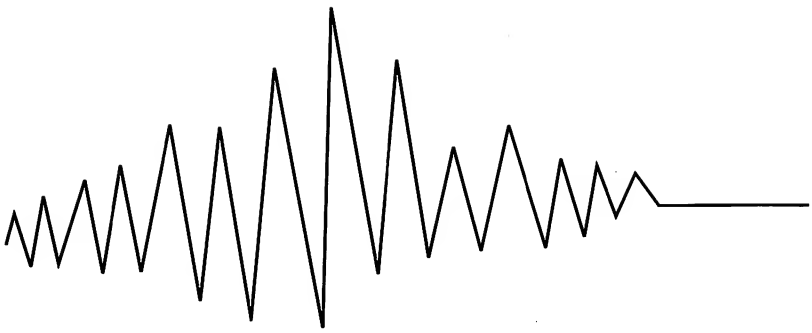

Feedback

Version 2.0 KickDOS.Bench?

I currently own a stock Amiga 3000 16/50, apparently one of the early 1991 models. I'm constantly reading reports about new versions of Kickstart, AmigaDOS, and Workbench being released by Commodore, and I have become confused about the process of upgrading to these new versions.

The profusion of version numbers of various aspects of the system software surely needs clarification. The "version" command under Workbench 2.0 shows Kickstart version 36.143, Workbench version 36.68. Also do these early 3000s use AmigaDOS 2.0 or 2.04, and is AmigaDOS in ROM? Is the "long-awaited release" of Workbench 2.0 ROMs (or is it AmigaDOS ROMs?) pertinent to 3000 owners? What are the latest version of things and their formats—disk, ROM, etc.? What is Commodore's policy regarding upgrading early 3000 machines?

Finally, a recent issue of a computer buyer's guide stated that Commodore has decided to discontinue the 16MHz version of the 3000. Is this true? Thanks for any information you may offer.

Joe Campana
Plymouth, MI

You're not alone in your confusion, Joe. There are many original A3000 owners who are puzzled about AmigaDOS release 2 versions. When the A3000 was originally released, the KickStart was loaded off floppy or hard disk—like the A1000 startup. Since the AmigaDOS release 2 version supplied with the A3000 was not the release version, and still going through some major fixes, it was easier to distribute new releases by diskette rather than by ROM. The official release of AmigaDOS release 2 is 2.04 with KickStart v37.175 and WorkBench v37.67. Many of the newer 2.0-only products do require KickStart v37 or higher.

As you know, there is an Enhancer Kit available to upgrade owners of A500/2000's to AmigaDOS 2.04 (ROM upgrade). But what about A3000 owners? Just go to your local dealer and pick up your free A3000 upgrade (some dealers may have a minimal copying charge). This is a five-disk AmigaDOS 2.04 upgrade for owners of original A3000 models. All new A3000 series models will come with AmigaDOS 2.04 in ROM.
We can't confirm nor refute the report on the discontinuation of the 16MHz A3000.—Ed.

Propeller Heads=UNIX Professionals?

Regarding your November 1991 editorial—both Mr. Kizior and The Bandito need straightening out. I will address Mr. Kizior's problem first.

I can understand Mr. Kizior's taking offense at being called a "propeller head" by The Bandito—clearly a derogatory epithet, although I would not hazard to pin it down beyond that. What grates on me is Mr. Kizior's reference to the Amiga as a toy computer. Now I can't tell from Mr. Kizior's letter what computers he uses on a regular basis, nor what he does with them. "UNIX professional" has about as much informational content as "propeller head." But since he's so critical of computing power, it must be pointed out that his personal lack of power is primarily his own fault or circumstance. Mr. Kizior's A1000 is five or six years old, and from the sound of his letter—unexpanded. Unless he's running with at least an '030, an SCSI hard drive, xxMB of RAM, and Workbench 2.0, he really has no business commenting on the capabilities of the Amiga. The above configuration can be achieved on that A1000 he's so attached to.

As for The Bandito, although the concept of his column "Roomers" is good, its implementation is frequently poor. Far too much emphasis is given to games. The column is supposed to focus on Amiga-related rumors, such as upcoming but not officially announced products. Instead, it's often the *Nintendo News* and information about products that have already been officially announced. Keep "Roomers." Rehabilitate The Bandito or shoot him—whichever is quicker.

John Malone
Brantford, Ontario
Canada

Lest anyone who hasn't read The Bandito's September column come to the conclusion that The Bandito singled out Mr. Kizior for caricature and ridicule, let us quote from "Roomers": "What is it about UNIX that fascinates these companies?...Have you ever tried to use a UNIX application? Yuck. Leave UNIX to the propeller heads, OK?"
As for the column concentrating on games where instead it is "supposed to focus on Amiga-related news," bear in mind what the disclaimer at the beginning of the column states, simply that The Bandito gleans his rumors "from whispers within the industry," not just info on unannounced new products, nor on anything else in particular, so broad is The Bandito's charge. Looking back over several issues, we find the column focusing on hardware, software—not all of it games—BBSs, and on the reorganization, sale, or failure of companies, several of which happen to be game developers, so brittle can that business be.
Although he reports yet-to-be-announced new products quickly to AC *in his column submissions, some companies dread being scooped by a third party, so then make their announcements ahead of schedule when they suspect that publication by a third party is imminent. Maybe it's the case of their having their own sources in the publishing industry, a sort of counter-Bandito!*

Over the last several months, some readers have ordered The Bandito fired, banned, whipped, imprisoned, and even lobotomized. This is the first time that anyone has suggested homicide for one of AC's most nettlesome and popular columnists.—Ed.

GAC Has Demonstrated *WordPerfect* in Halls, at Stalls and Malls

We've owned, supported, and promoted *WordPerfect* for many years. We considered it a good word processor and believed that the company would stand behind its product.

Our club has demonstrated WordPerfect at meetings, in malls, and at computer shows. We have shown it to several gatherings of Amiga enthusiasts, stressing its excellent word processing capabilities. We all expected an upgrade.

You wonder why your Amiga center doesn't garner enough sales to support improvements. Mabe it's because WP is four years behind other word processors for the Amiga. Your competition has taken the Amiga capabilities in color, sound, multitasking, and animation and run away with the market. Don't tell us WP isn't selling enough. We know that! Instead explain to us why you don't compete to get the market share on the Amiga that you deserve.

We have members waiting to upgrade to 5.1, and the Amiga community is holding its breath. Now we hear that your company may not continue to upgrade. This is a sad commentary for such a company. Will you please reconsider?

Bob Scharp, Secretary
Gateway Amiga Club
Bridgeton, MO

Unfortunately for those waiting to upgrade, WordPerfect Corporation has decided not to release any further versions of WP for the Amiga, apparently because the number of new purchases of v5.1 would not justify a new release. According to WordPerfect Corporation, all development has stopped but continued support is promised to any Amiga WP owner at (800) 321-3204.—Ed.

Analyzing Ammons, Cameron, Manasa, Thain, and The Bandito.

I have a few suggestions that improve Keith Cameron's "Geting the Most From Your RAM Disk" methods [*v7.1, p.38*]. The first is that instead of copying them to the RAM: disk, just make the new "RAMC" directory and rename the commands from "C" to "RAMC" -> "rename c/list ramc/list". This is a little more straightforward than copying, deleting, and then recopying.

The second suggestion is to skip the whole thing and make them resident -> "resident c/list", for example. This is available to anyone with Workbench 1.3, pretty widely in use since it has been around for a few years and applies to commands run from the 'shell', the first tool icon that shows up when the "Workbench" disk is open.

Anyway, with 'resident' only one copy is ever in memory, rather than the two copies (one in RAM: disk and the other executing) that the other method uses. It takes an extra 1K to keep the 'list' command in the RAM: disk over making it 'resident' and an extra 11,640 bytes to actually run it.

Also, part of the 'shell' is the ability to run script files if the 's' attribute is set for the file. For Keith's example, the command "protect s:ramc +s" would suffice. Then just typing 'ramc' would run the script. 'Execute' is needed only for 'cli'.

The method that Keith mentioned, using the RAM: disk, is good for programs that don't have a 'p' in their attributes list. Of the few programs in the 'C' directory that don't conform, most are likely to be used from the comand line. The only exception I can imagine that would be useful is ICONX, but to use that requires sufficient experience so that its use will not be a hindrance.

Of course, Sam Ammons' "Memory Expansion for Your 500" [*v7.1, p.20*] got to the point about using 'resident'. Sam suggested that it is a trick to find out what is being requested by a "Please Insert..." I found that *SnoopDos*, FF 451, really helps to nail these troubles right away.

Sam is a bit off with memory allocation. The only memory that would cause programs to fail is that which is above the 16MB limit if the 68000, but to get at it requires a 68020, '030, or '040.

It is more often the case that some programmers assumed that machines with 1MB of memory had 512K available to both the custom chips and the CPU, aka Chip RAM, They would try to force some data structures into 'fast RAM'. But on a 1MB A500 or A200, it may all be 'Chip RAM'. The program would then die, claiming there was insuficient memory to run.

Among other articles, I really enjoyed Rick Manasa's article "Help for the Help Key [*v7.1, p.28*]." Although I haven't needed help like that for a long time, the spotlighting of two favorite products, *MachIII* and *Gizmoz*, was pretty nice. I got Gizmoz when it first

came out, one of the best assortments I have ever used. Oh...MachIII is not PD. At least the disk I have says that the copyright belongs to Brian Moats.

Thank you, thank you, thank you, Doug Thain [*v7.1, p.66*]. While I hadn't actually tried 'open("SER:","rw"), I was just inches away from it. Even if that would work, the explanation of how ports and devices work was absorbing.

On to The Bandito: if he wonders what's holding back the Amiga, it's the poor support, not just the hardware. The Macintosh might not have all the fun chips, but for a few percent more in price, you get a machine with available software a thousand percent ahead in quality. Even the CDTV system screams with poor software development. I'm still looking for an entry-level spreadsheet without a cartoon look and feel, and a bunch of bug reports from users.

GVP, Consultron, and Bill Hawes—to name a few—have been a plus. EA, Aegis, and Coast-to-Coast make the Amiga look toy-like. What's the difference? The first three meet needs in an expert manner, but the last three have shipped crippled software and then asked for money to upgrade to a different crippled condition.

In three years, the Amiga may go the way of the C-64 and its real ancestors, the Atari 400 and 800. Eight years is a long time for any computer system to remain unchanged, and the Amiga has already had five. It has become an expensive game machine. Notice AC's coverage, v7.1, p. 63, of the [Bart]SimpsonAmiga and new games in "European Excitement" and "New Products." I think these say it all.

Well, I'll get back off the soapbox now. Before I sign off, let me remind you that Mac and IBM buyers don't write you and don't care. It's not too late for the Amiga, but time's running out.

David Schenken
St. John, MO

Good work, Dave, in commenting on and adding points to several of the stories in the January issue. Also, others have remarked on what a popular game machine the Amiga is in the U.K. as well as on the Continent. Let's hope that its full potential is realized soon by other than just game developers.—Ed.

An Amiga Trade Show in Davenport, IA?

I disagree with your editorial complaining of too many Amiga events in the U.S. My problem is that that are too few—that I can get to.

I think a little geography is in order. Look at a map of Europe and compare it to a map of the U.S. having the same scale. Europe is *small*! Add to that the fact that Europeans have something we lack: a relatively inexpensive, efficient rail system. Exhibitors can manage with fewer shows and still reach many more Amiga users.

I'm a long-time Amiga user owning a greatly expanded A500; I'm also a working stiff. I can't afford to fly one or two thousand miles to attend a show. My realistic limit is what I can drive to and return home in one day. This amounts to a 200-mile radius from my home, involving eight hours of driving, and leaving little time to actually attend the show.

Being a lowly user and not a trade journalist, I can't write off things like meals and lodging. Just driving 400 miles would add about $60 to the cost of attending the show.

I live in the Orlando, FL, area—home of Disney World and Universal Studios, both of which use Amigas in production. Well, gentlemen of the trade press, there have been two Amiga shows here in the past several years. Contrast that to the several MS-DOS-oriented shows *per year*. It's easy to understand why so many people, *even computer dealers*, misconstrue the word "Amiga," believing it to be Spanish for female friend.

While I sympathize with the plight of Commodore and developers attempting to exhibit at a multitude of shows, limiting the exposure of the Amiga to West and East Coast shows would be to abandon the vast majority of current and potential users who don't have easy to New York or Los Angeles.

Please, there must be a better solution. I urge you to take the lead in finding it.

Ronald Accardy
St. Cloud, FL

In the best of all possible user worlds, there should be shows spread throughout the year in Bangor, ME, Ft. Lauderdale, FL, Tacoma, WA, and San Diego, CA, as well as in some locations like Davenport, IA, El Reno, OK, and Ishpeming, MI, to acommodate many. However, "trade journalists" and small developers, who don't "write off" expenses but pay them with real currency, would face budget depletion pretty darn quick.
Remember, that each show means taking several key employees away from their work at journals and production companies, lodging, and feeding them. Nevertheless, we'll continue to search for a compromise on show dates and locations.—Ed.

All letters are subject to editing. Questions or comments should be sent to:

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HOT TIPS

Win a free game!

Send in the best tip and win!

Fantastic Voyage (Centaur Software)

How to get out of Level 2: At the very end of the level, destroy the enemy blocking entrance and enter the circle with FULL energy. You will lose a ship and not proceed to Level 3 if you do not have full energy.
(Courtesy of John Sievers, Centaur Software)

When you see the bubbles in Level One, enter the larger, brown bubble. It will act as a shield for your ship. Destroy enemies by touching them with the shield instead of shooting them.
(Courtesy of John Sievers, Centaur Software)

Awesome (Psygnosis)

Between combat, you can easily adjust your shield and weapons to your favor. Hold down the + key on the numeric keypad and click on the shield icon. The screen will flash to a green color. You will receive $2000 extra to your cash amount and 2000 units of fuel. Also, you will have unlimited shields—you're indestructable.
(Courtesy of Psygnosis Technical Support)

Atomino (Psygnosis)

When you complete 10 levels in a row in Atomino, the game gives the player a code. Here are the codes to advance to higher levels:

Level 10: IDYLL
Level 20: TAURUS
Level 30: NEPTUNE
Level 40: PHOTON
Level 50: PLANKTON
Level 60: INFERNAL
Level 70: FOSSIL
Level 80: POISON
Level 90: SOUP
Level 100: SULPHATE
(Courtesy of Psygnosis Technical Support)

Shadow of the Beast II (Psygnosis)

As soon as the game begins, head to the right. Ask the pygmie: 10 PINTS. You will now have unlimited lives.
(Courtesy of Psygnosis Technical Support)

The Killing Game Show (Psygnosis)

If you're having trouble making your way around, here's a helpful hint. When you've finished a level and the game asks you to press the fire button to advance to the next level, hit the HELP key instead. A map of the upcoming level will appear on the screen.
(Courtesy of Psygnosis Technical Support)

Space Ace II: Borf's Revenge (ReadySoft)

The cheat code for the game is HURRYDEX. Type this in at the score screen at the beginning of the game.
(Courtesy of ReadySoft Technical Support)

Team Yankee (Empire/ReadySoft)

In scenario 2, the scenario will not end until the two Russian APC units are destroyed at objective B.
(Courtesy of ReadySoft Technical Support)

Wrath of the Demon (ReadySoft)

Towards the end of the forest, the medallion is needed to finish the game. When you approach the switches on the ground, avoid the first switch. Hit the second switch to set the blades in motion. There is no known cheat code for this game.
(Courtesy of ReadySoft Technical Support)

Send in your HOT TIPS on your Amiga games to:

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DIVERSIONS

Spacewrecked

by Miguel Mulet

Ugh!! Getting up on a Monday morning is hard enough, but when you've been in cybernetic sleep for seven years, it's rough! The computer, unfortunately, has not awakened you to tell you that you're almost home, but to tell you that it has discovered a fleet of 20 ships which may get you home faster. The only problem is, all 20 ships are inoperational, and you won't be able to move any of them until you fix them all. Thus, you have two choices—either spend an indeterminable amount of time trying to reach Earth in your hopelessly damaged spacecraft, or take the time to man each ship and repair them individually. Considering your're *Spacewrecked*, 14 billion light years from Earth, what's your choice?

It would have been a much easier decision if you only had one ship, but this fleet was built at a time when a brain-damaged designer had them all interlinked—no ship can leave without the others. The Darwin Biological Survey fleet, as these ships are known, were on a mission to explore alien worlds and collect typical species of life found on these worlds. The crew and her specimens are alive, but a bit crazy since they weren't awakened from cryogenic sleep properly when the fleet time-warped into an exploding supernova. So not only do you have to repair each ship, but you have to defend yourselves from insane lifeforms.

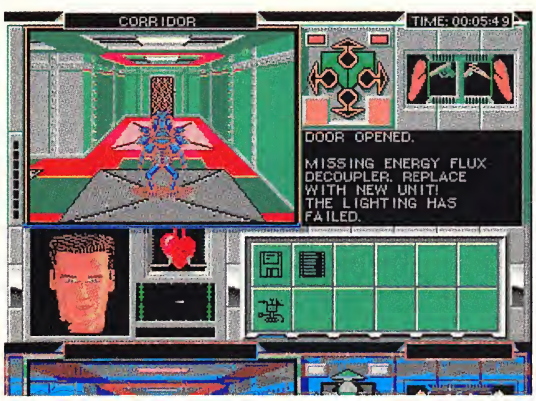
To accomplish your mission, unless you decide to wait the 14 billion light years to get home, you must explore each ship, inspecting for and repairing the damage with parts which are loose all over the ship. If you're lucky, you'll find one or all of the ship's droids, which can be programmed to help you repair some of the damage.

Moving about the ship is easy, using the mouse to press directions on a movement icon located in the middle of the screen. Your view is represented by a screen on the left, in which you can shoot your enemies but cannot pick up the items you may find. To pick them up, you press the inventory icon found on the lower right portion of the screen. Other icons present on this screen allow you to interact with functional computers you find on board, as well as program and instruct your droids to find spare parts and repair crucial subsystems. If you find you've collected too many items, you can offload them to some of the droids to make your load lighter.

Game graphics are average, but more than suitable for the game at hand. Unfortunately, the programmers decide to make the crosshairs on your weapons jump (supposedly due to the amount of your adrenalin), rather than having the aliens move about. Thus, defending yourself can become rather tedious. Other than this, however, the graphics are adequate. At the lower left of the screen, there are icons representing your health status. The more you look like a skull, the worse off you're doing. There's an animated heart also. A yellow heart means that you may have to get some medical attention. The sound effects also include a heart monitor, which audibly tells you how your character is doing.

The game is presented on three double-copy-protected disks. Not only do you have to identify an alien creature from the manual, but you can't copy the game onto a hard disk. There is a provision to save a game in progress, as well as turn off the sound effects. The manual is a little hard to follow. All the information you need is in there, but you may want to try to make your way through a few times in order for it to make a little more sense.

Despite its deficiencies, Spacewrecked is a challenging game. Each ship has three levels, and the number of rooms and their location change from ship to ship. Your obstacles are many and you have to collect several items to repair each ship. Even with the droids helping you, this can take some time. Once armed with appropriate weapons, your droids can also be programmed to defend you. Each ship can take a couple of hours to explore and repair, so completing your goal can take a lot of time. The game really is a type of space-aged dungeon, where your treasures are the parts you need to repair each ship. Although it wouldn't really be fun to be stranded that far from home, Spacewrecked is a nice way to see if you'd make it back alive.



You'll run into lots of strange characters while trying to repair the ships.

Arachnophobia

by Jeff James

Based upon the popular movie of the same name, *Arachnophobia* brings out the spider-stomping crusader in Amiga owners everywhere. The game begins with the player being accepted into the esteemed Delbert McClintock Bug Elimination Agency, which promptly outfits the player with the required accouterments of a soldier of spider misfortune.

The storyline is loosely based upon the film. In summary, viciously deadly spiders (offspring from a deadly South American species) have begun infesting towns across America, endangering the lives of thousands of innocent citizens. Only your employer has the pesticide which is concentrated enough to kill this new breed of spider: virulent "Toxi-Max," the ultimate in bug extermination liquids.

Your goal is simple. Attacking this eight-limbed menace one town at a time, the player must exterminate his way through an abundant number of towns, eliminating all of the soldier spiders, all the egg sacs, and the queen spider before advancing on to the next town. Eventually, if the player has done well at exterminating the spider menace at home, the United Nations will send the player to the jungles of South America, the stomping grounds of the spider species which started this whole mess.

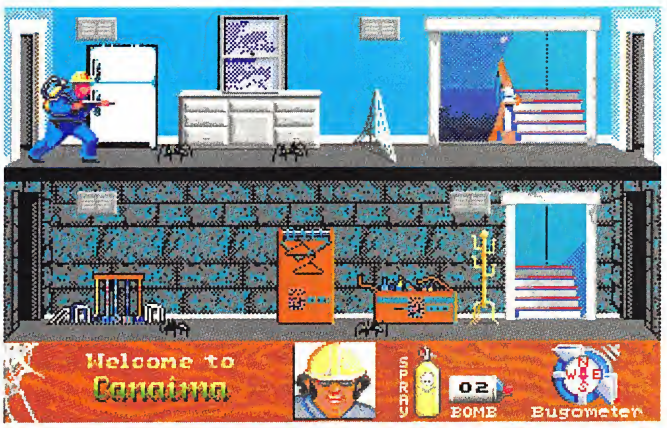
Gameplay is primarily of an arcade nature. When the player arrives in a new town, an overhead map clearly shows all of the spider-infested homes. The player then must manuever his or her vehicle to a house that needs exterminating, then press the fire button. The car stops, and your on-screen alter

ego dashes into the house. Once inside, the action shifts to a side view, displaying the player and several levels of the house. Using your spray gun filled with Toxi-Max and a supply of "bug-bombs," you must eliminate all of the arachnids on the premises, including a single egg sac. Once one house has been cleared of spiders, the player must continue through all of the homes in the town until the queen spider has been found and destroyed. Only when the queen spider in each town is defeated may a player advance to the next level.

The graphics and animation are acceptable, making good use of the Amiga's 32-color mode. Digitized sound effects accompany most of the actions in the game; players will hear Delbert proclaim that "The cavalry has arrived!" when entering a building. After the player has successfully sprayed a spider, Delbert occasionally shouts such things as "Sit on a tuffet!" and "Too quick for ya!" When a player clears a house, the response is either "Another satisfied customer!" or "Let's bug outta here!" Arachnophobia is geared for younger children; my 8-year-old nephew thoroughly enjoyed the game, while my interest was of a milder nature.

Arachnophobia requires 512K of RAM, and it can be installed on a hard disk. Copy protection is in the form of a dark red "copy-proof" spider identification chart. The game ran fine on all the Amigas I tested it on, including the A3000. The manual claims that the program does not support AmigaDOS 2.0, although it seemed to operate fine when I tried it.

All in all, Arachnophobia is a pleasantly simple arcade action game with crisp graphics, plenty of digitized sound, and an affordable price tag. Tailored for kids, Arachnophobia might not be that interesting to adults. But if you're the type of person who cringes visibly at the sight of any small, scurrying arachnids on your bathroom floor at night, this game might just be your chance to get even with those little critters.



Exterminate the spiders as fast as you can in Disney Software's Arachnophobia.

Oh No! More Lemmings

by Jeff James

As one of the most popular Amiga games of all time, *Lemmings* has captured the hearts and minds of nearly every Amiga owner. Rescuing hordes of tiny, dull-witted rodents from certain destruction has become second nature to many of us. Demos have been created dealing with them (witness Eric Schwartz' Anti-Lemming demo), and even CDTV, MS-DOS and Atari ST owners have had the opportunity to rescue a Lemming or two.

So how can Psygnosis top their best computer game success ever? *Oh No! More Lemmings* (ONML), the title of Psygnosis' new sequel to Lemmings, is an answer to that question. Someone once said that "more is not always better," but in this instance I'd have to disagree.

Psygnosis released two versions of ONML—a stand-alone version and an add-on version. The add-on version requires the original Lemmings program disk. ONML consists of a single diskette which must be booted before you insert any of your original Lemmings diskettes. After a few disk swaps, the ONML disk remains in your disk drive and the game commences. The stand-alone version runs by itself and does not require the original Lemmings nor any disk swapping. Just pop in the disk and play!

Veteran Lemmings gamers will find that the interface is basically unchanged; ONML is simply adds 100 new levels of game play. Broken into five levels of difficulty, including new two-player levels, I found that the higher levels of ONML were exceptionally difficult. The first 20 or so seemed rather simple; finishing them was a snap. Players who found the higher levels of the original Lemmings to be too easy are in for a much rougher time. On the levels I managed to herd my tiny, green-haired charges through, I saw new traps, new terrain, and heard new music to accompany gameplay. ONML requires 512K and runs fine on accelerated Amigas, including the A3000. Just as the original Lemmings, the ONML is not an AmigaDOS format diskette, so you'll be unable to make a backup.

ONML is just what most Lemmings aficionados would want, although I do have a few small criticisms. The music in ONML seems not to be quite as varied as in the original Lemmings, and I found myself turning off the music to concentrate on saving rodents in silence. Also, I was hoping that Psygnosis would have made ONML hard disk-installable. More and more Amiga owners own hard drives, and it's a shame that we can't enjoy the same convenience that the MS-DOS owners of Lemmings are privy too.

Quibbles aside, ONML is a must buy if you're a Lemmings fan. I've heard that Psygnosis has plans to continue expanding the Lemmings universe in the future, including a forthcoming "Lemmings Construction Set," which will allow players to make their own Lemmings levels. With support like that, I see Lemmings remaining a centerpiece of every Amiga gamers software library.

That's right, they're back: 100 new levels of "Lemmings-mania."

Conflict: Middle East

by Jeff James

The long-standing feud between Israel and its Arab neighbors is the focus of SSI's wargame for the Amiga, *Conflict: Middle East* (CME). A brigade-level simulation played on a hex-grid map, CME allows players to serve as either the leader of a combined Arab army or as supreme commander of the Israeli military forces in one of two separate scenarios: the 1973 Arab-Israeli war, or a hypothetical conflict set in the 1990's.

CME's playing interface is a refined version of the one used in an earlier SSI wargame, *Red Lightning*. Except for when entering the password copy protection or naming a saved game, all aspects of the game are mouse controlled, making issuing commands during gameplay a snap. Gameplay is broken down into a series of AM and PM turns, with air operations, unit movement, and other options available during each of those turns. CME can be played solo against the computer (with the computer assuming control of either the Arabs or the Israelis), or it can be played with two human players. The computer can be set to a variety of difficulty levels, with the highest being extremely difficult to defeat. New players should set the computer on the lowest level and get some experience before tackling the higher difficulty settings.

Trouncing your opponent, either made of silicon or flesh and blood, requires that you pay special attention to the strengths and weaknesses of your forces. When commanding the Arabs, the player must generally rely upon two advantages for victory: strength in numbers and massed artillery. In playing both scenarios, I discovered that I had the best luck against the Israelis when I massed my plentiful artillery around any major ground advance. Since Arab forces outnumber Israeli units in both scenarios, making combined attacks on enemy units from as many directions as possible usually resulted in victory. This can be difficult at times, especially when CME restricts players to stacking a maximum of two units per hex. To a lesser extent, I found that pressuring the Israeli player by simultaneous advances from Syria to the north and Egypt to the south spread out his defenses enough for me to succeed. These principles won't (and didn't) apply in every instance, but they worked pretty well when I used them.

When commanding the Israelis, the player has the advantages of greater unit flexibility and more effective air assets. While Arab units can be ground down to uselessness by attrition, Israeli forces can be swapped between units, allowing the creation of massive and brutally lethal combat groups. Instead of being forced to move shattered units to the rear (as the Arab player is forced to do), the Israeli player can salvage damaged units to create larger, more lethal groups. Israeli air power is also considerably better than the Arab player's, dramatically so in the 1973 scenario. A concentrated series of air strikes on advancing Arab ground units can mete out a surprising amount of punishment.

More hints and tips for victory can be found in the excellent instruction manual. The authors spend a considerable amount of space discussing the formulae used to generate their outcomes, something more technically minded gamers will enjoy. Stat-hungry wargamers will also appreciate the detailed listings of all the military equipment used in the game.

CME supports hard drives and runs fine on accelerated Amigas, including the A3000. AmigaDOS 2.0 is fully supported, and CME will operate without difficulty on any 1MB Amiga. Alas, I do have some minor gripes: the computer opponent often takes quite a while to plan its moves (especially on an A500), and CME refuses to acknowledge the presence of any floppy drive other than DF0:. The graphics are a trifle plain, and there is no sound or music played during the entire game. While that might be acceptable for a wargame, it would have been satisfying to hear the rumble of firing artillery and the explosions of a successful airstrike.

As a purely strategic exercise, CME doesn't disappoint. Playing CME was also an enlightening experience, letting me look behind today's headlines and perhaps gain some understanding of the situation that has been the source of so much conflict over the past four decades. While its small number of scenarios and lack of true Amiga support may discourage some gamers, CME is nevertheless a playable, challenging, and surprisingly enlightening software diversion.

The airstrike screen in Conflict: Middle East

Silent Service II

by Miguel Mulet

Beneath the oceans of the world lies a lethal force. A force which has played a cat and mouse game with its opponents since its inception. Operating silently under the waves, U.S. submarines have protected citizens by maintaining a constant vigil, posing a constant threat to enemies. Submarine warfare has always been an important part of U.S. naval operations, but really came of age during World War II. Although submarine casulties were extremely high, the commanders of these vessels almost completely wiped out the Japanese merchant marine. Do you have what it takes to join the Silent Service?

Silent Service II is the sequel to MicroProse's original World War II submarine simulatation, which first came out in 1985. Like the first game, Silent Service II allows you to command a submarine of the World War II era. Your goal is to patrol the seas of the Pacific, engaging in combat with as much of the Japanese fleet as you can. Unlike the original, the new game sports better graphics, better sound effects, and a better manual.

After identifying a ship displayed on the screen from pictures in the manual, you're ready to decide on how to approach your career as a submarine captain. You can start by commanding a training mission against unmanned targets, or you can undertake one of eight single historical battles. If you have a lot of time (in the hours to days category), you can go on an entire war patrol or start a war career, which ends when the war ends. The four difficulty levels add an extra element of challenge to these scenarios, because you can choose to be virtually invincible or realistically vulnerable. Besides these options, you can command one of nine progressively better submarines, use flawless or historical torpedoes, and choose the war zone in the Pacific you wish to patrol.

A direct hit on a cruiser with the deck gun!

On board the sub, you have several screens with which to occupy your time. The information panel displays the navigational charts, as well as your heading, speed, and number of torpedoes available. Along the bottom of each screen are several icons, allowing you to look through your periscope, view the battle from the bridge, or man the deck gun. Keyboard equivalents mean that you can disable or ignore the icons, which during the heat of battle tend to react a little slowly.

The gauges screen quickly reveals to you the conditions of the submarine. Course and speed, water temperature, depth, battery level, engine room telegraph, depth under keel, fuel gauge, and tube indicators are all present on this screen. The damage report screen gives you even more detailed information about sub operation, showing you what systems are damaged and/or whether they are repairable or not. Most vital equipment must be repaired at a friendly port, cutting your war patrol short.

Actual game play is much fun, although your contact with enemy ships may seem fairly slow unless you acclerate time a bit. After all, the Pacific ocean is quite large. Although it takes a little time to learn all the commands, a short tutorial in the manual as well as a keyboard template makes things much easier. Since the template is for the 500/2000/3000, 1000 owners will have to lay it in front of their keyboards, or prop it up nearby. Although there is a lot of action to the game during actual combat, you have to have the cunning of a fox to outmaneuver and sink many of your opponents. Strategy, therefore, plays a large role in the game as well.

Game graphics and sound effects are well done, much better than the original. The Amiga graphics aren't quite as nice as the VGA graphics shown on the box, but are better than expected. Sound effects are faily realistic, as well. The mouse can be used to maneuver the submarine, deck gun, and periscope, but using the keyboard commands is actually easier once you get the hang of it. The 128-page manual not only explains the commands, but delves into the strategy and tactics of submarine warfare. The two-disk set will install on a hard drive, but if you have an earlier version the install program may not work properly. Microprose's bulletin board has the correct install program, or you can return the game for a newer copy.

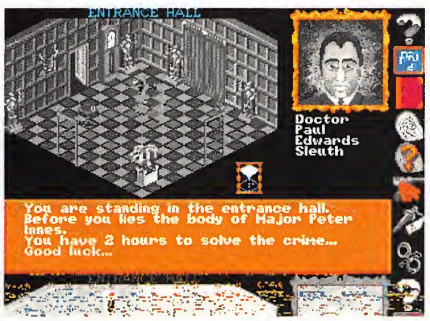
Overall, Silent Service II is a well-done sequel to the original. Gameplay is enhanced by the improved graphics, sounds, and game features. Although gameplay is similar to the original, the "extras" make Silent Service II exciting and interesting to play. If you'd like to return to Pearl Harbor circa 1941, here's your chance.

Murder!

by Miguel Mulet

One of our family favorite board games has always been *Clue*. Sitting around the game board on a cold winter's night, family members would look suspiciously around the table trying to figure out who killed Miss Scarlet, and where and how they did it. Well, if you'd like to try your hand at solving up to 3 million cases, you should investigate *Murder!*

In this game by U.S. Gold, the player becomes a sleuth trying to solve a murder between the years of 1915 and 1945. The murder has taken place in one of several different homes, although your investigation is thankfully limited to one home at a time. There are also four different playing levels, just to add to the challenge. Unlike the classic board game, there are many more suspects and potential murder weapons, which means you'll have to make good use of the 24 hours you have to solve the crime.



The entrance hall is where you begin your investigation.

Using an icon-driven interface, you maneuver around the premises interrogating witnesses and collecting evidence. Pressing the right mouse button reveals either an arrow, which you point in the direction you'd like to move, or a magnifying glass. Pressing the left mouse button allows you to carry out the action. The icons on the far right portion of the screen allow you to interrogate a witness, see a map of the house, examine the notebook in which you can record vital clues, take fingerprints and compare with them others, collect exhibits, and finally, make your arrest.

To make an arrest, you must find out who, where, and with what the murder was committed. Falsely accusing a suspect disgraces you and ends the game, while correctly identifying the suspect brings you fame and glory. Arriving at a conclusion, however, can be most difficult. Since there are so many characters, weapons, and locations, it can take a long time to reach a final deduction even at the easy levels.

The simple interface makes the game easy to play. Although the main playing area is in black and white, it adds to the ambience of the period you're investigating. Sound effects are sparsely used and generally not missed, and although the graphics are not spectacular, they are more than adequate. The one-disk game is doubly copy protected—it uses both a copy protection on-disk and a key word lookup in the manual. The rear of the manual features a synopsis of several famous murders—many of them quite morbid in nature and not suitable for youngsters.

Even on its easiest settings, Murder! can be difficult to play. There are almost too many items and suspects, and you'll really flex the muscles in your brain to figure out whodunit. It can be done without despair, but you'll have to be very patient during your investigation. This tediousness is the game's greatest shortcoming. If you love to solve a great mystery, why not try solving a Murder!?

Action Stations!

by L. S. Lichtmann

All dilettantes, please take one step back from the computer screen. *Action Stations!* is a serious naval combat simulator for devotees of the "big gun" era.

RAW Entertainment (the initials stand for "roleplaying", "adventure", and "wargames") is a new publisher which has taken over the distribution of several war and strategy games from smaller organizations where they may not have been able to get the exposure they deserved.

Action Stations! (AS) comes with two floppies full of program and data, and a dauntingly thick manual. It requires a 1MB Amiga and will install on a hard drive, although it plays quite satisfactorily from floppies. The distribution disks are not copy-protected, but a manual-based protection scheme is used which annoyingly requires a great deal of line counting and attention to letter case. AS can be played either human vs. computer or human vs. human; modem play is not supported.

Action Stations! is a simulator for naval surface warfare for the post-World War I through WWII era. The "surface" must be emphasized: AS deals only with ship-to-ship combat using guns and torpedoes. This is less limiting than it might seem. WWII furnishes many interesting examples of surface-only actions (remember the Hood and the Bismarck?), and it comes with thirty scenarios selected from the Pacific, Atlantic, and Mediterranean theaters of the War.

Action Stations! is for purists. There is no chrome at all. The one graphical element is the Battle Plot and even that will appeal only to ascetics. The symbols, derived from the U.S. Navy's Naval Tactical Data System, are meant to convey a maximum of information with a minimum of clutter. The Battle Plot, however, is a functional as it is stark. The plot can be magnified, compressed, or shifted in any direction desired for the situation at hand. The rest of the interface is black and white text, plain and functional. There are a few awkward characteristics—for instance, ship information screens return one automatically to the main screen when it would be more convenient to remain and peruse data on other ships — but generally, interaction is quick, easy, and can be done almost completely with the mouse.

All the effort in AS has gone into trying to make the program an accurate simulation, particularly with respect to the problems and decisions a fleet commander has to face. In the role of fleet commander, the player must decide on disposition of forces, including course and speed for all individual ships and/or formations of ships, based on limited information. The program uses an elaborate visibility model to determine what can be seen of the enemy, and the Battle Plot maintains the "fog of war" generated by this model. For instance, if contact with a enemy ship is lost and then regained, the ship will disappear from the plot and then reappear with a different ID number, reproducing the confusion likely in a real battle. Beyond deployment of forces, the player must make decisions on fire control (AS simulates the "director fire" system used in warships of the era), assigning gunnery targets, opening and ceasing fire, launching torpedoes, use of spotlights and starshells in night actions, and damage control. To compound the commander's headaches, gunnery and fire effects model numerous factors including time of day, wind, and sea condition. The program also takes account of national characteristics. For instance, the U.S.'s horrible torpedo reliability record

in the early years of the War, and its superior damage control expertise are reflected in the combat model.

Supporting all this is a massive data base covering all major ship types of destroyer size or larger from the U. S., U. K., France, Italy, Germany, and the Soviet Union during the historical period covered. Even types which existed only on paper, such as the U. S.'s Montana-class super-battleships, are represented.

Great efforts have also been made to ensure long-term value. Aside from the random factors which can be introduced upon starting one of the scenarios provided, both a scenario editor/builder, and a scenario generator, which automatically constructs scenarios according to broad parameters supplied by the player, are included.

A ferocious-appearing manual is a pussycat upon inspection. A great deal of the bulk turns out to be a thorough discussion of internal features of the game and listings of data. Another chunk is taken up by a discussion of tactics which should be useful to all but naval officers and the most experienced of armchair admirals. The actual instructions on game functions are clear, concise, and well-organized, and I commend RAW for the high quality of the manual.

If AS has a weak point, it's speed. Combat with large fleets can become irritatingly slow, and Battle Plot screen redraws stretch out into coffee breaks. Like other recent military simulations, such as *Harpoon* and *Universal Military Simulator II*, AS simply seems to have reached the limits of the 68000 CPU used in most Amigas. It should be a lot more pleasant to play on A3000s or machines with 32-bit accelerators.

AS is not for everyone. Those looking for a straightforward and relatively undemanding strategy game will do better elsewhere. Those enthusiasts demanding a realistic naval warfare simulation and uninterested in tinsel will find Action Stations! an exemplary product.

•AC•

product information

Spacewrecked
Price: $49.95
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R.A.W. Entertainment
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Recursive Function Calls in ARexx

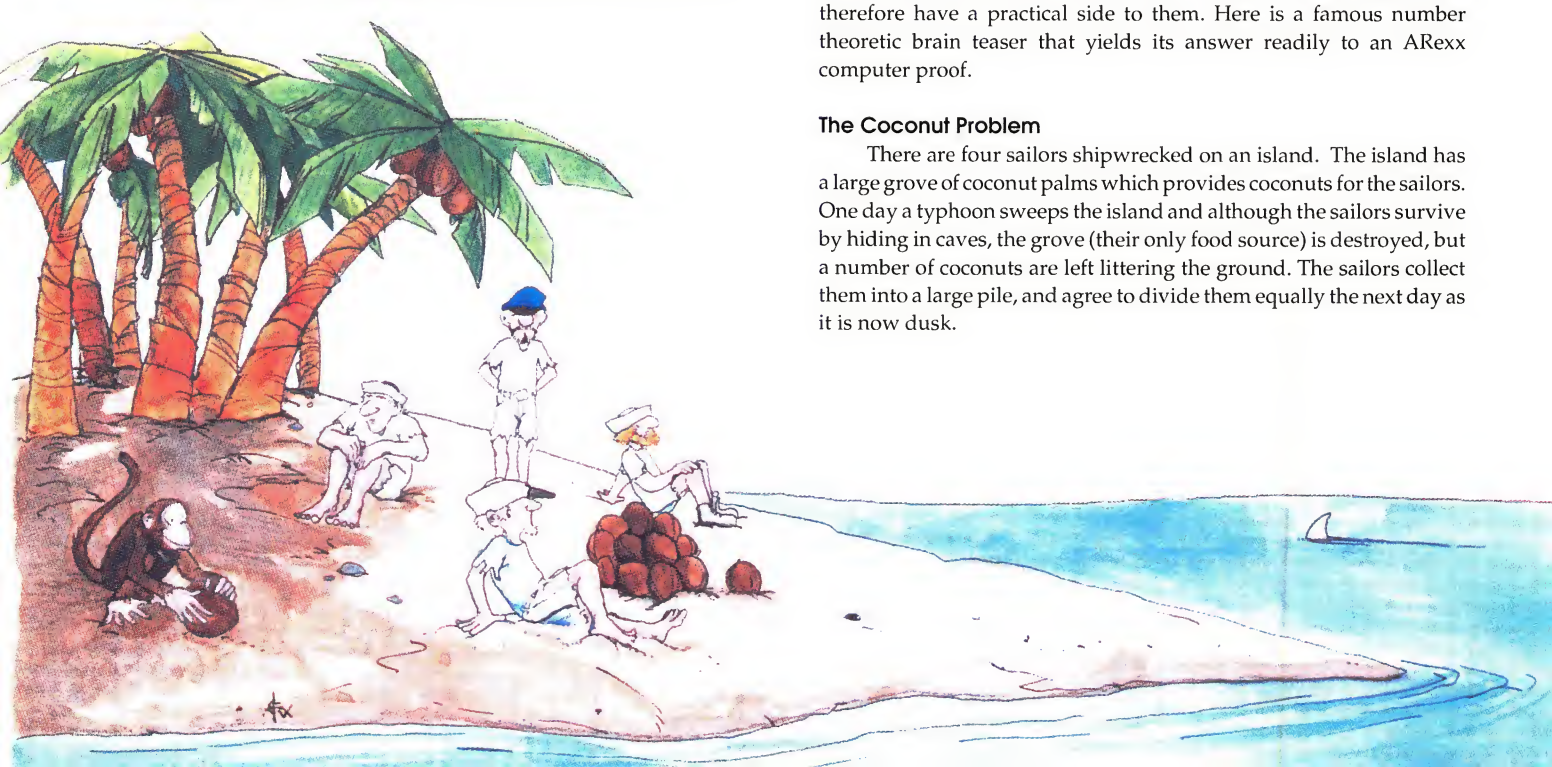
A Recreational Study in Self-Reference

by Merrill Callaway

Self-reference can take many forms. For instance, two gurus are sitting in a cave. One turns to the other and says, "I came here to contemplate the futility of it all, but I see that it's useless." The sentence " 'is not a sentence' is not a sentence." also demonstrates a tangled self-reference. In computing, self-reference is called recursion. A recursion is a self-referential structure in which a function or a routine calls itself during its own execution or performs some other form of self-reference such as modifying its own code. Recursions are powerful, but they can be tricky. In programming, it is generally safer to avoid recursions if possible, but in some cases they are convenient and useful. ARexx is capable of running recursive functions that call themselves from within the function procedure itself. An example of such a recursive function (that computes factorials) is in either of the ARexx Manuals, the one by William Hawes, on page 35 or in System 2.0 documentation by Commodore, on pages 10-68. A function call outside a procedure may itself be recursive as we will demonstrate here.

Iteration

In general, whenever you can make a function use only one "kernel" computation that starts with a "seed" estimate and feeds the result of that computation into the same computation as a new "seed," it is a candidate to become either a recursive function or a to be called recursively. When many calculations must be accomplished, this method is sometimes referred to as an iterative technique, and proves useful in solving all sorts of number theoretic problems and finding solutions to systems of equations that do not yield to ordinary algebraic means. An entire branch of mathematics called Numerical Analysis concerns itself with these iteration techniques and the theory of their operation.



Algorithms

Iteration (not to be confused with the ARexx ITERATE instruction) and other mathematical computation procedures are called algorithms. You may think of an algorithm as analogous to a recipe in a cookbook. An iteration algorithm is a set of procedures for doing multiple calculations evaluating one formula over and over again until some sort of criterion is met such as convergence to one value with an arbitrary degree of accuracy. The number of calculations sometimes runs into the millions. The famous Mandelbrot Set is a map of the complex number plane showing the results of multiple recursions of one simple formula called the Mandelbrot fractal iterated thousands or millions of times to determine only one criterion for each coordinate: Is it inside or outside of the Mandelbrot Set? Whether the value of the expression converges or not (as each new evaluation is fed into the expression as the new seed) determines whether the point is in or out. Since convergence or not depends upon the degree of precision we choose, the fascinating boundary between "in" and "out" becomes increasingly complex and "lacy" as we magnify the area of interest. In our example program, we will perform an algorithm until the result is an integer, a much simpler concept.

Computer Proofs

With a computer, you may find solutions that are difficult or even impossible to obtain otherwise. If the solution is involved in a proof of a theorem, it is called a computer proof, and usually sneered at by pure mathematicians. Mathematicians also call such proofs "brute force solutions," and they may have a point. Although computer proofs are not usually elegant or even ingenious, they do find answers and therefore have a practical side to them. Here is a famous number theoretic brain teaser that yields its answer readily to an ARexx computer proof.

The Coconut Problem

There are four sailors shipwrecked on an island. The island has a large grove of coconut palms which provides coconuts for the sailors. One day a typhoon sweeps the island and although the sailors survive by hiding in caves, the grove (their only food source) is destroyed, but a number of coconuts are left littering the ground. The sailors collect them into a large pile, and agree to divide them equally the next day as it is now dusk.

Each sailor happens to be both dishonest and greedy. During the night, the first sailor wakes up and hatches a selfish scheme. In the moonlight, he sneaks over to the pile without waking his mates, and counts the coconuts and finds that their number can be evenly divided into four equal piles with one coconut left over which he throws to a nearby monkey. He hides one of the four piles for himself as a hedge against starving before his three mates, groups the remaining three piles into one, and sneaks back to bed and sleeps.

As you may have guessed (mathematics isn't much on plot twists), the other three sailors do exactly the same thing: They find the remaining pile may be evenly divided into four parts with one coconut left over, which they throw to the monkey. Then they hide one of the four piles for themselves and regroup the other three piles into one and go back to bed. In the morning, since all four are guilty as sin, they pretend not to notice the much diminished pile of coconuts, but once again they find that the pile may be evenly divided into four equal piles with one coconut left over which they throw to the monkey (who ends up with five coconuts).

What is the minimum number of coconuts that must have been in the original pile last night?

An Ideal Candidate for Recursion

This tricky little problem is ideal to demonstrate recursion in ARexx, because it does the same thing five times: subtract one; divide by four; multiply by three. However, it cannot be readily solved by ordinary algebraic means, because it has only one equation and an infinite set of unknown quantities, only one of which has the minimum value.

If N represents the original number, then the first sailor leaves a pile containing 3*[(N-1)/4] coconuts. The next sailor uses the value of this expression as his N and so on. By means of ARexx we can find the answer by brute force if we start with a seed n equal to the integer 1 (coconuts are a code word for integers or whole numbers). We then try the kernel computation above as a recursion formula nested five deep. At the end, we test if the result is an integer or not. If it is, we stop and report that we have found N, the minimum number of coconuts, and if not, we increment n to the next integer and try again. We've just written the narrative form of our required ARexx code, so we can start programming right away.

```
/* Coconut.rexx The coconut problem */
   n=1             /* Start with integer 1    */
   DO FOREVER
   num=fun(fun(fun(fun(fun(n)))))   /* THE RECURSIVE CALL
*/
   IF DATATYPE(num,whole) THEN DO   /* Test for whole number
*/
   SAY 'The number 'n 'is valid. It is the minimum.'
   EXIT 0
   END
   n=n+1
   END /* THE INTERNAL FUNCTION */
   fun: PROCEDURE
   ARG i
   i=i-1 /* Throw one to the monkey */
   i=i/4 /* Divide into 4 equal piles        */
   i=3*i /* Group the other 3 piles */
   RETURN i
```

The program is very simple. We use a DO FOREVER loop with only one way to exit, when we satisfy the DATATYPE() function with a whole number n (an integer). This would be dangerous if we never reached a solution!

If you ever get stuck in an endless loop, to stop all ARexx activity in the system, open another shell, and at the prompt enter: HI (for Halt Interrupt) and all ARexx programs will stop.

DATATYPE() is very useful to check strings for UPPER or miXed case, alphanumeric data, numbers of various sorts, valid ARexx symbols, and more. The manual reference is Hawes, page 56, or Commodore, pages 10-101. This is an important function to know and a little study will pay off.

The Central Recursion

Our recursion is a five-deep nest of calls to the function 'fun,' an internal procedure. The only thing different here from usual function calls is that the recursive call does not assign a value to num until the internal function 'fun' has been called five times by the nested assignment expression, each time feeding the previous result into the function as its new argument. After five iterations of the call, if the value of num satisfies the DATATYPE() 'whole' then we exit and SAY the message. Otherwise we increment our n guess and do it all over again.

See if you can succeed in making 'fun' itself recursive. You will soon run into trouble, as it modifies its argument i each time through, and any attempt to keep track of five iterations will confront you with a problem in computing called self-modification. Any attempt on your part to implement a loop to count from 1 to 5 within 'fun' will be a part of any recursive calls to 'fun' and you will soon get into deep guacamole. This is why you must be very careful with recursions, should you use them. Run this coconut.rexx program from a shell and in a little while you will know the answer. If you were to prove this result in a more rigorous mathematical sense, you must expect to spend a lot more time! Try it!

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—MEDLEY

(Continued from p. 46)

range of sound and then instructing the program to digitally create the echo. This is an inexpensive way to improve the sound of your instruments.

Once you have a satisfactory recording, you should trim any dead time at the start or end of the sample. Dead time at the start will cause a slight delay before the sample plays; dead time at the end wastes memory. Visual sample editing makes it easy to trim blank sections away from a sample. Once you have a "finished" sample, nothing more needs to be done to use it as a sound effect or play it by itself.

If you want to use it as an instrument in other music programs, however, you will need to save it in IFF or SONIX instrument format. The way to do this varies with different software, but typically involves tuning the waveform so it plays at the proper pitch and then "resampling" it before saving. Most software can create five octave IFF instruments from a single digitized sample. Some programs can use the detail found in higher sampling rates to create better quality instruments without using extra memory.

Looping offers another way to save memory by stretching a short sample over a long duration by repeating the looped section over and over. This is good for sounds like organs, which don't change much over time. The challenge is to find good loop points that don't cause pops or clicks when repeating. One hint is to find a part of the sample that doesn't change much and try to set loop points there. Sample editing software can find a loop point automatically or can locate "zero crossings" ideal for looping. The IFF format limits the possible loop points, so it isn't always possible to find a "clickless" loop. If you have trouble, one fix is to cut a small amount from the beginning of the sample and then try to find new loop points. You may have to try several times before you get a good loop. Once the sample is looped properly, you can save it as an IFF instrument.

Another application involves sampling a background section and playing it over and over again. This works especially well for drum and horn parts, where there are several instruments playing at once. You can sample the complete pattern and then play it using one Amiga voice, leaving three voices to play melodies over the background part. The only trick involved is to make sure the tempo is correct when recording, because you won't be able to change it once the sample is recorded. Trim the sample so that it lasts only one measure, using looping to hear the results of each edit. While you can leave the loop points set when saving the sample as an IFF instrument, it is better to play the sample using repeated whole notes. Otherwise the voice may be "stolen" if the music program attempts to play more than four notes at a time, which could cause your background to drop out abruptly.

These tips should help improve the quality of your Amiga samples. Nevertheless, there are limits to the quality available using 8-bit internal voices. If you want better sampled sounds there are two options: purchase a 12 or 16-bit audio digitizer board for your Amiga, or buy a MIDI sampler. If you own a 2000, 2500, or 3000, an add-in board may be the answer. If you own a 1000 or 500, an external MIDI sampler is your only choice. Current samplers offer 8 to 24 voices with sound quality that can rival CD players. There are a few companies that make Amiga graphic sample editing software for most samplers.

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Dealing with Hum

Since Amigas are frequently used in video setups, hum can often be a problem when digitizing audio. Hum typically manifests itself as a loud, low pitched noise. The usual cause is two different grounds in a system, with a cable TV hookup the most frequent culprit. There are three generic solutions to hum problems. The first is to disconnect cable TV or other video cables while digitizing. This will frequently eliminate the problem. You can reconnect the cables once you're done digitizing. A second solution is to isolate the cable signal from the computer and TV. This is done by connecting two 300 to 75 Ohm video transformers (known as baluns) back to back in line with the cable TV input. The baluns isolate the cable ground from the electrical ground used by the rest of the system, eliminating the hum.

A third solution is to isolate the ground on the audio signal. Radio Shack sells a "Ground Loop Eliminator" designed for use with car stereos. It uses a transformer to electrically isolate a pair of audio cables from the rest of the system. This is an easy way to solve hum problems, and costs less than $15.

AC Disks

Source code and executable programs included for all articles printed in *Amazing Computing*.

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AC V5.8, V5.9 and AC V5.10

Fully Utilizing the 68881 Math Coprocessor Part III:
Timings and Turbo_Pixel Function. Author: Read Predmore.

C Notes From the C Group 5.8 & 5.10: Functions supporting doubly linked lists, and a program that will examine an archive file and remove any files that have been extracted. Author: Stephen Kemp

Time Out!: Accessing the Amiga's system timer device via Modula-2. Author: Mark Cashman

Stock-Portfolio: A program to organize and track investments, music libraries, mailing lists, etc. in AmigaBASIC. Author: G. L. Penrose.

CygCC: An ARexx programming tutorial. Author: Duncan Thomson.

Programming in C on a Floppy System: Begin to develop programs in C with just one megabyte of RAM. Author: Paul Miller.

Koch Flakes: Using the preprocessor to organize your programming. Author: Paul Castonguay

AudioIllusion: Experience an amazing audio illusion generated on the Amiga in Benchmark Modula-2. Author: Craig Zupke

Pictures: IFF pictures from past Amazing Computing issues.

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AC V5.11, V5.12 & V6.1

Keyboard Input In Assembly: Fourth in a series of Assembly 68000 programming tutorials. Author: Jeff Glatt.

A Shared Library for Matrix Manipulations: Creating a shared library can be easy. Author: Randy Finch.

C Notes From The C Group: A discussion on cryptography. Author: Stephen Kemp

ZoomBox: Attaches a zoom box to an Intuition window and allows the user to toggle the window's size and its position. Author: John Leonard

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AC V6.2 & V6.3

C Notes 6.2: A reminder program to display messages. Author: Stephen Kemp

More Ports For Your Amiga: Files to accompany article. Author: Jeff Lavin

Ultra Sonic Ranging System: BASIC Sonar Ranging program. Author: John Iovine

Writing Faster Assembly: Continuing the discussion of speeding up programs. Author: Martin F. Combs

C Notes 6.3: Working with functions. Author: Stephen Kemp

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AC V6.4 and V6.5

Blitz Basic: Here are some examples created wtih M.A.S.T.'s integrated BASIC environment. Author: Paul Castonguay

Creative And Time-Saving Techniques: Enchancing and fine-tuning images through definition. Part of the Fractal series. Author: Paul Castonguay.

Practal Modula-2 Buffered Disk I/O: Buffer file input and output to improve disk accessing speed. Author: Michal Todorovic.

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AC V6.6, V6.7, V6.8, & V6.9

Practicalities: Practical uses of Finch's previously documented Matrix.library. Author: Randy Finch

Selecting and Setting Gadgets in C: The third and final installment in the "Crunchy Frog" approach to programming. Author: Jim Fiore

C Notes6.6: A new skeletal program to "jump start" utility programs. Author Stephen Kemp

Fancy Numbers: This helps you save overhead by skipping the translator library. Author: Lynwood Cowan

C Notes6.7: Adding functions to handle file pattern processing. Author: Stephen Kemp

Message Logger: A time log that keeps track of when programs are run. Author Brian Zupke

Power Basic: Use a pre-processor to achieve definition replacement. Author Jonathan Horne

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AC 6.10, 6.11, 6.12, 7.1, 7.2, 7.3

Puzzled Over ARexx Parts 1&2: ARexx have you running around in circles? Learn the usage of basic commands through this entry-level ARexx program. Author: Merrill Callaway

Simplified File Decompression Using ARexx: Compress and decompress files with this simple ARexx program. Author: Randy Finch

Jump Tables in Modula-2: Learn the intricate details of Modula-2 programming. Author: Michal Todorovic

DePuzzle: With this neat little program, you can solve some age-old probability questions. Author: Scott Palmateer

ZipTerm: An explanation of console.device and serial.device on the Amiga. Author: Doug Thain

ARexx Translator: The premier of AC's ARexx column. Using ARexx to translate number bases and character codes. Author: Merrill Callaway

FC Calc: Create these MaxiPlan templates to help organize interest and finance charges on your credit cards. Author: Rick Manasa

Recursive Function Calls in ARexx: How to create and use recursive function calls in ARexx. Author: Merrill Callaway

The Fred Fish Collection

Below is a listing of the latest additions to the Fred Fish Collection. This expanding library of freely redistributable software is the work of Amiga pioneer and award winning software anthologist, Fred Fish. For a complete list of all AC, AMICUS, and Fred Fish Disks, cataloged and cross-referenced for your convenience, please consult the current ***AC's Guide To The Commodore Amiga*** available at your local Amazing Dealer.

FredFishDisk561

PPLib A shared library to make life easy for people who wish to write programs that support PowerPacker. Loading crunched files from C or assembly is made fast, short and easy. This is version 35.255, an update to version 34.2 on disk 414. Includes source. Author: Nico Francois

PPMore A "more" replacement program that reads normal ascii text files as well as files crunched with PowerPacker. The crunched files can result in considerable disk space savings. This is version 2.0, an update to version 1.8 on disk 542. Binary only. Author: Nico Francois

PPShow A "show" program for normal IFF ILBM files or ILBM files crunched with PowerPacker. The decrunching is done automatically as the file is read. Version 2.0, an update to version 1.2a on disk 542, binary only. Author: Nico Francois

ReqTools A standard Amiga shared runtime library which makes it a lot quicker and easier to build standard requesters into your programs. Designed with CBM's style guidelines in mind, so that the resulting requesters have the look and feel of AmigaDOS 2.0. Version 1.0a, includes source. Author: Nico Francois

SuperDuper A very fast disk copier and formatter. Can make up to four unverified copies from a ram buffer in 36 seconds. Verified copies from a ram buffer take 67 seconds for one destination drive, plus 34 seconds for each additional destination. Version 2.0, an update to version 1.0 on disk 488. Binary only. Author: Sebastiano Vigna

ToolsDeamon Allows you to run programs simply by selecting a menu item from the tools menu of WorkBench 2.0. Both shell and WorkBench programs are supported, including arguments and tool types for both. Version 1.0, binary only. Author: Nico Francois

FredFishDisk562

CLIsizer A little hack to allow you to easily resize the WorkBench screen from any CLI or Shell window. Version 1.0, includes source. Author: Torsten Jurgeleit

Degrader Degrades your machine to try and get badly written programs to work. Locks out fast memory, turns off cache and burst modes, traps privilege errors, forces PAL or NTSC modes, etc. Survives reset. Version 1.00, binary only. Author: Chris Hames

Filer An excellent shareware file manager featuring buffered directories, soft- and hard link support, configurable by ASCII file and much more. This is a demo version with some minor features disabled. Needs KickStart 2.0. Shareware, binary only. Author: Matthias Scheler

Fkeys Adds window and screen switching functions to the function keys in conjunction with the left Amiga key. For example, use the left-Amiga + F10 to get help and a remove requester. Version 1.1, includes source. Author: Torsten Jurgeleit

Intuisup A shared library with support routines for using texts, borders, gadgets, menus, and more. Version 2.0, includes source to library and test programs. Author: Torsten Jurgeleit

ShowGuru Recognizes 168 different guru numbers and translates them to "human understandable form". Can also print the result. Version 2.1.b, shareware, binary only. Author: Thomas Carstens

FredFishDisk563

bBaseII A simple database program using an intuition interface. Stores, sorts and searches for information. Limited to 9 fields in each record. Features include fast sorting, search in any field, and best of all, it's really easy to use. This is version 5, an update to version 1 on disk 491, and is much improved. Binary only. Author: Robert Bromley

Kpri Another NEC-p6 intuition front end to choose several print styles and add a title line on the top of the page. You can split your text files into their odd and even pages and print on both sides of the paper. Requires AmigaDOS 2.0. Version 2.0, includes source. Author: Koessi

M2Midi A Modula-2 interface to Bill Barton's v2.0 "midi.library". This is version 1.03. Includes source in Modula-2. Author: Jürgen Zimmermann

Menu2Asm A module for A-L AG's Modula-2 compiler "M2Amiga V4.0" that automatically creates modules for pre-initialized menus for the use with this Modula-2 compiler. Requires A68k by Charlie Gibbs or any compatible assembler. This is version 1.0. Includes source in Modula-2. Author: Jürgen Zimmermann

MidiKeyboard A program that makes it possible to play MIDI keyboards connected to the Amiga with a MIDI interface via mouse or computer keyboard. It is possible to control up to 16 notes independently with the computer keyboard. Requires Bill Barton's "midi.library", V2.0 or higher. This is version 1.0. Binary only. Author: Jürgen Zimmermann

ReqLibrary A Modula-2 interface to Colin Fox's and Bruce Dawson's "req.library" v2.5. This is version 1.01. Includes source in Modula-2. Author: Jürgen Zimmermann

FredFishDisk564

ALoad A program similar to XWindow's XLoad to display the load-factor on your Amiga. Requires KickStart 2.0. Version 1.1b, includes source. By Alexandru-Aurel Balmosan

DisKey A sector oriented disk monitor with lots of useful features like disassembler, user-friendly ASCII and hex editing facility, and extensive search options. Useful for salvaging data from damaged disks, or for learning about the inner workings of AmigaDOS. Supports req.library, and external diassembler libraries. Can be iconified to conserve memory. Comes bundled with German and English documentation and a multilingual user interface. On NTSC machines, DisKey will be forced to interlace mode. The version on this disk is 2.1, shareware, binary only. Author: Angela Schmidt

DoPro This program patches the intuition OpenScreen routine to change the ViewMode of a new screen, eg. to open a NTSC instead of a PAL screen or to use Productivity instead of an interlaced display. In fact, you can change most para-meters in the NewScreen structure. This is version 1.5, includes source. Author: Michael Illgner

MSCalendar A little calendar utility and a MClk-like Memory Clock in one program. It works fine with KickStart 2.0. Includes both English and German versions. This is version 1.10, includes source. Author: Markus Stipp

FredFishDisk565

AddMenu A program to add infinite number of menus to the Tools menu on Workbench V2.0. Uses the correct Workbench library calls and allows updating from CLI or from within the menu itself, meaning infinite number of functions. This is version 1.56, an update to version 1.54 on disk 553. Binary only. Author: Nic Wilson

CanDoDemos Demos of the capabilities of CanDo, an interactive software authoring package utilizing graphics, sounds, buttons, menus, etc, and a powerful, easy to use scripting language. Binary only. Author: INOVAtronics

PCompress A gimmick free and very easy to use program for most com-pression requirements. Uses the latest LZH compression algorithms and aims at the optimum mix of efficiency/speed/memory usage. Can handle single files, whole drawers, disks, or selected files or types of file within drawers and disks. In PACK mode it can consolidate files into less space than whole-disk compression tools or archivers. Version 5.1, binary only. Author: Chas A. Wyndham, LZW code by Barthel/Krekel

SysInfo A program which reports interesting information about the configuration of your machine, including some speed compar-isons with other configurations, versions of the OS software, etc. This program has been very popular with many users around the world and has been fully updated to include many new functions as requested by users. This is version 2.51, an update to version 2.40 on disk 553. Binary only. Author: Nic Wilson

FredFishDisk566

AM Algorithmic music generator. Produces MIDI output via Bill Barton's midi.library. This is version 1.1. Requires OS 2.0. Includes source. Author: Michael Balzer

ApfelKiste "ApfelkisteTM is yet another mandelbrot program, but very fast and simple to use. It has special assembly routines for fixpoint calculation. Includes versions for 1.3 and 2.0, 68000 and 68030 each. Full source (C/Assembler) included. Author: Michael Böhnisch

Bomber Amiga version of the MacIntosh game called "Bombs". This is version 1.2. Requires OS 2.0. Includes source. Author: Michael Balzer

FoCo Format controller. A graphical user interface for disk formatting. Pops up on disk insertion or via hotkey. This version 1.1. Requires OS 2.0. Includes source. Author: Michael Balzer

FredFishDisk567

AmigaMail A collection of source code listings from the first eight issues of Amiga Mail Volume II, published by the Commodore Amiga Technical Support group (CATS), from Sept 1990 to Nov 1991. Lots of very useful examples. Author: Various

AutoCLI A 'DMouse' type replacement that works with WorkBench 2.0 and fully compatible with A3000 & accelerator boards. Always retains the default path and stack, and current directory. Can automatically open CLI/SHELL windows to 1 pixel less than the current screen size on opening. New functions include spline patterning on blanking, toggle freeze mouse, more function keys, mouse activated screen shuffle, close gadgets on Shell windows, and more as many users have requested. This is version 2.06, an update to version 1.99 on disk 553. Binary only. Author: Nic Wilson

DiskPrint Prints disk labels (for 3.5" and 5.25" disks), primarily for FD library disks, with the ability to create, handle, load and save label library files so labels for most FD disks are available after a few mouse clicks. Features include different label sizes, intuition based directory-read-in, label library functions and multiple print of any label or FD disk serie. Works fine with every printer connected to the parallel port and AmigaOS 1.2/1.3/2.0. This is version 3.4.3, an update to version 3.1.2 on disk 546. Both English and German versions. Shareware, binary only. Author: Jan Geissler

MouseAideDEMO A demo version of a "Mouse" utility with all the standard functions; mouse acceleration with threshold, window and screen manipulation by mouse and keyboard, mouse and screen blanking, SUN (auto-activation) mouse, user definable "hot key" command, etc... Also has functions other mouse programs do not, such as multi-icon-select with only the mouse, left and right button swapping, mouse port switching, WorkBench to the front function, freezing of the mouse and keyboard of all input, etc. Written in assembly language for efficiency in size and CPU usage. Version v2.56a, shareware, binary only. Author: Thomas J. Czarnecki

SetRamsey A program that allows you to test the current settings of the RAMSEY ram controller chip on an Amiga 3000 under Kickstart 1.3 or 2.0, and change them if you wish. Useful for hardware debugging to control static column mode, burst mode, or change the refresh rate. Version 1.50, update to version 1.02 on disk 423. Binary only. Author: Nic Wilson.

FredFishDisk568

CalorieBase Program designed to provide a caloric and fat count for recipes which do not provide this information. It can also quickly give the calories for a specific food or total the calories you consume throughout the day. Version 1.1, binary only. Author: Mike Richan

Schoonschip A pioneering algebraic manipulation program which has been used in particle physics and continuously developed since late 1963. Not as friendly as Mathematica or Maple, with no graphics or intuition interface and not as much built in, but still a general purpose algebraic manipulation language. Written in machine language to run fast and be memory efficient. Capable of handling large problems. Includes large and small workspace versions, tutorial examples, sample programs, and a comprehensive manual. Version 5-Oct-91, binary only. Author: Martinus J. G. Veltman and David N. Williams

VMK What makes this program is its ability to detect new viruses as they come along. Simple quick easy way to stay virus free. Tiny quick and very intelligent memory detector/killer for your startup-sequence. This is V1.10, an update to version 1.0 on disk 510. Binary only. Author: Chris Hames

FredFishDisk569

PPLoadSeg This program patches the loadseg routine to automatically recognize files crunched with PowerPacker. After running PPLoadSeg crunched libraries and devices are still recognized by AmigaDOS. You can even crunch fonts and use them as normally. Version 1.1, an update to version 1.0 on disk 542. Binary only. Author: Nico Francois

SonicArranger Demo version of a music program that supports sampled and synthesized instruments as well as sound and note transposes for patterns. The optimizer can be used to reorganize the internal data structure of a song. SonicArranger allows 254 instruments created from 64 samples lots, 64 synthetic waves, adsr's, lvo's and sound effects. Can also load and convert noisetracker 2.0 compatible song modules. Version 1.36b, binary only. Author: Carsten Schlote

Spliner A spline screen blanker commodity derived from Tom Rokicki's Mackie utility, with a programmable pattern change timeout. Binary only. Author: Tom Rokicki and Sebastiano Vigna

TrackMaster A small tool to help game developers create self booting, trackdisk loading game disks. Trackmaster uses a script file to process data files (join, compress, relocate, special actions). The processed data is written to disk via trackdisk.device. A boot block for the first data file, which should be a pc-relative loader, and a file look up table, is created and written to disk. Manual and source included. Version 1.7. Author: Carsten Schlote

FredFishDisk570

DirWork A fast, small, efficient, DirUtility. Configurable options and buttons, as well as all the usual features. Comes with external configuration editor. This is version 1.43, an update to version 1.31 on disk 511. Shareware, binary only. Author: Chris Hames

Fass A program which lets you reassign the FONTS: directory at the touch of a few keys without having to use the CLI. Version 1.02, includes source. Author: Jan van den Baard

GadToolsBox A program that lets you draw/edit GadTools gadgets and menus and then generates the corresponding C or assembly code for you. This is version 1.0, an update to the version on disk 547, where it was known as PowerSource. Includes source. Author: Jan van den Baard

MenuLock A program that lets you "lock" the menu strip of a window at the touch of a few keys, making it easier to browse the menu without accidentally selecting anything. Version 1.01, includes source. Author: Jan van den Baard

View A text displayer with many controls and features including searches, file requestors, jump to editor etc. This is version 1.5, an update to version 1.0 on disk 504, with a few bugs fixed and some new features. Includes source. Author: Jan Van Den Baard

FredFishDisk571

AutoCLI A 'DMouse' type replacement that works with WorkBench 2.0 and fully compatible with A3000 & accelerator boards. Always retains the default path and stack, and current directory. Can automatically open CLI/SHELL windows to 1 pixel less than the current screen size on opening. New functions include spline patterning on blanking, toggle freeze mouse, more function keys, mouse activated screen shuffle, close gadgets on Shell windows, and more as many users have requested. This is version 2.12, an update to version 2.06 on disk 567. Binary only. Author: Nic Wilson

CPUSet A small assembler utility to manipulate the various cache modes of the 68040, 68030 and 68020 processors. The copy-back mode of the 68040 is also supported. The program can operate from the CLI with single or multiple parameters or from Workbench via gadgets. Is compatible with Kickstart 1.3 or V2.04 and requires no external libraries or setpatch commands for the 68040 processor. Binary only. Author: Nic Wilson

Gwin This is version 2.0 of GWIN restructured as an AMIGA shared library. GWINor Graphics WINdow Is an integrated collection of graphics routines callable from C. These routines make it easy to create sophisticated graphics programs in the Cenvi-ronment. One-line calls give you a custom screen (ten types available), menu items, requestors, text, circles, polygons, etc. GWIN is a two-dimensional floating point graphics system with conversion between world and screen coordinates. GWIN includes built-in clipping that may be turned off for speed. Use of color and XOR operations are greatly simplified. Many examples of the use of GWIN are included in an examples dir-ectory. Examples include line/bar graph program, SPICE 2G.6 graphics post-processor, and others. Extensive documentation is included. Update to V1.1 on FF433. By Howard C. Anderson.

MemClear Walks through the free memory lists, filling free memory with a user-specified value. Display diagnostic information on CHIP & FAST RAM fragmentation. This is version 1.05, an update to the version on disk 58. Includes source. Author: Dallas J. Hodgson

SysInfo A program which reports interesting information about the configuration of your machine, including some speed compar-isons with other configurations, versions of the OS software, etc. This program has been very popular with many users around the world and has been fully updated to include many new functions as requested by users. This is version 2.53, an update to version 2.51 on disk 565. Binary only. Author: Nic Wilson

FredFishDisk572

CrossFade Interesting screen hack that smoothly crossfades between screens. Includes source. Author: Dallas J. Hodgson

Multiplot An intuitive data plotting program featuring flexible input options, arbitrary text addition, automatic scaling, zoom and slide with clipping at boundaries, a range of output file formats and publication quality printed output. Workbench printers are supported via transparent use of the PLT: device. Postscript and HP LaserJet printers are directly supported. This is version XLNe, an update to version XLNd on disk 467. Includes bug fixes and many new features. Binary only. Authors: Alan Baxter, Tim Mooney, Rich Champeaux, Jim Miller

ResetHandler Installs a handler in the keyboard.device reset handler list that is called when you press CTRL-Amiga-Amiga. It opens a window and counts down from 9 to 0 in ten seconds and then resets the machine. This gives the machine extra time to do vital things like validating disks, and gives you time to reconsider the reboot. Version 1.0, includes source. Author: Stefan Becker

WBStart WBStart is a package to emulate the WorkBench startup proce-dure, by loading a program, creating a process for it, and then sending it a WB startup message. Includes a handler process which does the starting of the processes for you and then waits for the startup reply messages. Version 1.0, includes source. Author: Stefan Becker

FredFishDisk573

MathPlot Another function plotter. With lin/log plot and a complete KS 2.0 interface. Needs Kickstart/Workbench 2.0 (V36 or higher). Needs mtool.library (supplied). Shareware, source available from author. Author: Ruediger Dreier

MToolLibrary A shared library for the Amiga. Some math functions and a bit of Intuition support. This is V2.20, an update to tool.library V2.06 on disk 376. A special FPU version is included. Freeware, binary only. Author: Ruediger Dreier

MultiPlayer Music player program which plays Soundtracker/Noisetracker modules, MED modules, and over 15 other types. It contains a simple control panel, and allows creating "programs" to play a list of modules in sequence or in random order. Works well with 1.3 and 2.0. Supports Workbench 2.0's "AppWindow" feature - just drop modules into the MultiPlayer window to play them. Plays modules at the correct speed regardless of video mode (NTSC or PAL). ARexx port and program load/save available in registered version. Version 1.11a, shareware, binary only. Author: Bryan Ford

Plasma Programs that generate very colorful Plasma Cloud Fractals. Plasma clouds are a special form of fractal which show very smooth color gradations. This is version X.x, an update to version 1.f on disk 285. Includes source. Author: Roger Uzun

Plotter A program to plot math functions. This is V3.98, an update to version 3.71 on disk 376. Needs mtool.library (supplied). Freeware, binary only. Author: Ruediger Dreier

FredFishDisk574

Chemesthetics Chemesthetics is a program that draws molecules using the calotte model. This means that atoms are drawn as bowls. Using this model, even extremely dangerous molecules like dioxine look quite nice. Chemesthetics has an Intuition user interface, can save pictures as IFF files, and has many example files. This is version 2.10, an update to version 2.06 on disk 536. Includes source in C. Author: Joerg Fenin/Metalworx

DiskSpeed A disk speed testing program specifically designed to give the most accurate results of the true disk perform-ance of the disk under test. Automatically updates and maintains an ASCII database of disk results for tested disks. This is version 4.1, an update to version 3.1 on disk 329. Includes source in C. Author: Michael Sinz

MKSLens This program magnifies a small area surrounding the pointer and displays it in a separate window. The magnification factor is adjustable from 1 to 16. Works in all supported display modes except for HAM. Binary only. Author: Michael Sinz

NewZAP A third-generation multi-purpose file sector editing utility, from the author of FileZAP. Displays and edits full 512-byte sectors via a 106 character wide internal font. Includes a search feature to find specific strings or hex digits, forwards or backwards. User-customizable, with new printing feature added. This is version 3.3, an update to version 3.18 on disk 164. Now DOS 2.0 compatible. Binary only. Author: Dallas J. Hodgson

FredFishDisk575

AmigaToNTSC AmigaToNTSC patches graphics.library so it will think you have an NTSC Amiga. AmigaToPAL will patch it to think you have a PAL Amiga. Custom screens will open in the mode selected. Version 1.0, binary only. Author: Nico Francois

DataPlot A program that plots data and algebraic functions in 2D. The user simply clicks on an option screen to select various options, such as type of marker, log or linear axis, auto vs manual scaling, gridlines. The macro language makes similar, repetitive plots easy to do. Data points can be transformed by an algebraic function prior to plotting. A macro can be automatically executed upon startup-up. Plots in any resolu-tion from 320x200 to 640x400. Plots can be saved as macro commands and IFF ILBM files. Prints directly to Epson compa-tible printers, or to any Preferences supported graphics printer via the PLT: device. This is version 2.16, which now includes a Legend command, and is now freeware. Fixes several bugs, including the optimizer for DrawFunction. Update to version 2.1 on disk 532. Source available from the author. Author: J. Dale Holt

PPLib A shared library to make life easy for people who wish to write programs that support PowerPacker. Loading crunched files from C or assembly is made fast, short and easy. This is version 35.256, an update to version 35.255 on disk 561. Includes source. Author: Nico Francois

ReqTools A standard Amiga shared runtime library which makes it a lot quicker and easier to build standard requesters into your programs. Designed with CBM's style guidelines in mind, so that the resulting requesters have the look and feel of AmigaDOS 2.0. Version 1.0b, an update to version 1.0a on disk 561. Includes source. Author: Nico Francois

FredFishDisk576

Analyzer This program allows data stored in one or more files to be examined as representations of electrical signals, either graphically or numerically, in the same manner as with a logic analyzer. Screendumps of the display may be produced. Compatible with NTSC and PAL machines. Tested with Kickstart 1.2 and 1.3. Version 1.00, binary only, shareware. Author: Andrew Hackett

Budget A program to help with managing personal finances. This is version 1.3.4, an update to version 1.3.3 on disk 546. New features include search, selection, replace, and printer output. Binary only. Author: Le Lay Serge Camille

TermII A telecommunication program with some nice features, including an ARexx Port, external process communications, XPR support, programmable function keys, postscript downloading to laser printers, phone book, programmable panel buttons, public screen support, etc. Documentation in English and in French. Needs Workbench 2.0. Version 1.1, binary only (some examples in C). Author: Eric Gontier

FredFishDisk577

LhA A very fast archiver that is compatible with MS-DOS LhArc V1.13 and LHA V2.13, as well as the Amiga LhArc. LhA is very memory efficient, has been written with stability and reliability in mind, has carefully optimized compression and decompression routines, is multitasking reentrant and pure, handles multiple volume archives (registered version only), and more. Also includes LhASFX, which creates SFX (self-extracting) archives from ordinary LhA archives. Version 1.0, shareware, binary only. By Stefan Boberg

OwnDevUnit This is the initial release of the OwnDevUnit.library programmer's pack. It provides an extended locking mechanism for a device/unit pair that makes using programs like getty much easier. Getty is a program that sits on the serial port waiting for calls to come in. By using OwnDevUnit.library, a program can request that getty temporarily release the serial port. Includes source. Author: Christopher Wichura

PetersQuest This cute game has you, the intrepid Peter, following a trail of hearts through a world of 20 levels, riddled with porcupines and other hazards, to rescue Daphne, the love of your life that has been kidnapped by the evil Brutus. Includes digitized sound and colorful graphics. Version 1.2, an update to version 1.0 on disk 224. New features include super speed, super jump, rocket pack, and more. Binary only. Author: David Meny

TurboQuantum ASCII bit twiddler program that will set or clear the "Disable Disconnection" bit in a Quantum drive's "Control Parameters Mode Page". Disabling disconnection during data transfers can result in a large performance boost on some systems. Binary only. Author: Ben Fuller

FredFishDisk578

Spice3 A version of the SPICE3e2 circuit analysis program which has been modified to run on the Amiga. This version is written in C, as opposed to the FORTRAN version on disk 278, and includes dynamically allocated memory, interactive post-processing and graphical plots. Requires a minimum of 1 MB of memory. Version 3e2. Binary only. Author: Many at UC Berkeley, amiga port by Brett Larson

FredFishDisk579

BinToHunk A utility to convert a raw data file (text, bit mapped image, etc.) into an Amiga Hunk format object file that can be linked using Blink. This is version 1.0, includes source. Author: Ray Burr

Cass Cassette Cover Printer V1.1 is a program to make cassette labels. It produces either the usual ASCII-character-labels or a source-text that can be fed to LaTeX. Written in Maxon's Kick-Pascal, source included. By Jörn Clausen

OctaMED A music editor which was originally designed for making music for programs (demos, games, etc), but works well as a stand-alone music program as well. OctaMED is the 8-channel version of MED. This is version 1.00b, released as a demo for the new commercial product, Version 2.0, Binary only. By Teijo Kinnunen & AmigaNuts United

FredFishDisk580

WorldDataBank Using a database of coordinates compiled by the CIA and made available under the Freedom of Information Act, this program plots world maps in cylindrical or spherical projections, with various degrees of magnification. Version 2.2, update to V2.0 on FF262, and now includes the largest available data file, for detailed mapping of even small sections of the globe. Includes source. Author: The CIA, Bob Dufford, Mike Groshart

FredFishDisk581

FileLocator Searches up to 28 mounted devices for specific files using wildcard matches. V 1.0, binary only. By Joe Rattz, Jr.

Neuro A neural network simulator which is able to learn patterns (e.g. letters) and recognize them. The program handles Hopfield and Backpropagation networks. Some examples are included. Version 1.0, binary only. Author: Berthold Ruf and Ulrich Wisser

Prism An ANSI editor that allows animations, and complete color control. It is used on many BBS's to create animated screens. Includes a configuration editor, font control, and variable playback speed. Version 1.4, includes source. Author: Syd Bolton, Chris Timmerberg, Colin Vernon

StopWatch A stopwatch application with the precision of one millisecond (variable), which scans the joystick button. Full multitasking capability and intuition interfacing, additional display screen for genlock output, ARexx port for parameter/result handling and screen manipulations. Written in Modula 2 and assembly language. This is version 3.0S, an update to version 2.0 on disk 466. Binary only. Author: Christian Danner

StripANSI Removes all ANSI codes from a text file, so that only the bare text remains. It is useful for editing terminal program capture buffers. Two versions are provided: one for the command line (CLI) and one with a full Intuition interface. The Intuition version includes the ability to selective strip certain ANSI codes, and generates a complete report. This is version 1.0, and includes full source in C. By Syd Bolton

FredFishDisk582

Diplomacy A classic strategy game loosely based on World War I. Designed for several players but can be played by as few as 2. The computer manages the game, resolving orders and graphically displaying the current status. Also provides map design capabilities for game variants. Version 2.0, shareware, binary only (source available from the author with shareware payment). Author: Steve Douthat

Questionator A program to create, update, and present multiple choice questionnaires. Version 1.07, shareware, source available from author. Author: Erik Von Raspator

VideoDat A very simple database to store information about your videos. Version 1.2, binary only. Author: Sascha Fengel

FredFishDisk583

ARoff A complete and powerful program for text formatting, much inspired by the "nroff" utility on UNIX systems. This is version 1.12. Includes source, and documentation in both English and French. Author: Denis GOUNELLE

ATbl A program for table formatting, somehow inspired by the "tbl" utility on UNIX systems. Can produce printer output, with IBM graphics characters, or a regular IFF ILBM file which can be read by any decent desktop publishing or wordprocessor program. This is version 1.00. Binary only, with English and French documentation. Author: Denis GOUNELLE

CPUSet A small assembler utility to manipulate the various cache modes of the 68040, 68030 and 68020 processors. The copyback mode of the 68040 is also supported. The program can operate from the CLI with single or multiple parameters or from Workbench via gadgets. Is compatible with Kickstart 1.3 or V2.04 and requires no external libraries or set patch commands for the 68040 processor. This is version 1.5, an update to version 1.1 on disk 571. Includes source. Author: Nic Wilson

FullView A text viewer that uses gadgets at the bottom of the screen (thus can display text 80 columns wide), opens up to the full size of the Workbench screen, displays ANSI color sequences and can load files compressed by PowerPacker. Also shows IFF pictures (which can also be compressed). This is version 3.04, an update to version 2.02 on disk 412, binary only. Author: Jonathan Potter

StopWatch A program to time events, including intermediate events, with an overall accuracy of about 250 milliseconds (since the timing events are registered by human interaction). Version 1.0, binary only. Author: Joe Rattz, Jr.

SuperLock A very flexible security program that can lock any or all of the devices present in the system, making access to them impossible. It can also optionally lock the keyboard and the mouse. Version 1.01. Requires arp.library. Binary only. Author: Jonathan Potter

SuperSpell A global spelling checker that checks your spelling no matter what program you are typing under. Can be used to check spelling when typing on a BBS, in a text editor, or anywhere else. Comes with a 9000 word dictionary, which you can edit, add to or replace completely. Version 1.1, binary only. Author: Jonathan Potter

SysInfo A program which reports interesting information about the configuration of your machine, including some speed comparisons with other configurations, versions of the OS software, etc. This program has been very popular with many users and has been fully updated to include many new functions. This is version 2.56, an update to version 2.53 on disk 571. Binary only. Author: Nic Wilson

TplEdit A gadtools template editor that is able to generate standalone C source code and does generate its own surface. This is version 2.00 beta, an update to 1.00 on disk 480. Requires AmigaDOS 2.0. Includes source. Author: Matt Dillon, enhancements by Koessi

WorldTime A clock that has two states. In the first state, it has a small window which shows the current time and also the current time in another city in the world. In the second state, a large window shows the time in 84 cities throughout the world. The list of cities is configurable. Version 1.31, includes source. Author: Jonathan Potter

FredFishDisk584

DataPlot DataPlot is a very special function "plotter". It does not really plot the data, but it creates a *.dat" file containing the function which you typed in and the corresponding values that have been calculated. The *.dat" file can then be read in by "MultiPlot" (from AmigaLibDisk 467), so that you can manipulate the data with much more powerful functions than most normal function plotter programs offer. This is version 1.00. Public Domain. Source in C included. Author: Stefan Zeiger

Electron Electron World is a cellular automation described in "Spektrum der Wissenschaft" ("Scientific American") March 1990. This is version 2.01, an update to version 1.20 from WizardWorks 1. Shareware US$ 10. Binary only. Author: Stefan Zeiger

EnvPrint EnvPrint is a handy tool for printing envelopes for letters. Just type in the addresses or load them from disk, and EnvPrint will organize the printing job for you. Version 1.20. Shareware US$ 10. Binary only. By Stefan Zeiger

ExeC ExeC is a small utility for executing CLI/Shell Commands from the Workbench. This is version 1.10. Freeware. Binary only. Author: Carsten Raufuß

IFFWizard IFFWizard shows all chunks of an IFF file together with a short description and the chunk lenght. It knows over 170 Chunk-IDs and Type-IDs and descends recursively into FORM-, LIST-, CAT- and PROP-chunks. This distribution also contains a companion file with a list of all chunk- and type-IDs known by IFFWizard. This is version 1.10. Freeware. Source in C included. Author: Stefan Zeiger

RevHead REVHEAD is a program for generating info files for your existing sourcecodes/executables. The info data is stored in a separate file. Features Kick/WB 2.0 environment. Version 1.05. Freeware. Binary only. By Carsten Raufuß

SpLi A program for generating spherical ssajous figures. Algorithm taken from "Spektrum der Wissenschaft". Version 1.00. Public Domain. Includes C source code. Author: Carsten Raufuß

TextStat An extended "wc" (word count) program. It has all features of the SAS/C "wc" plus the ability to count the frequency of ASCII characters, alphabetical characters and many other things in a text. Version 1.10. Freeware. Source code included. Author: Stefan Zeiger

TurboLife A quite comfortable implementation of the cellular automation "Life". Version 2.01. Update to version 0.60 from WizardWorks 1. Shareware US$ 10. Binary only. Author: Stefan Zeiger

WizardClock The ultimate workbench clock. Features a nice WB2.0 design, an easy-to-use intuition interface, 3 languages, analog clock, digital clock, calendar, alarm, and the ability to "read" the date and time with the "SPEAK:" device. Version 1.20. Public Domain. Source in C included. Author: Stefan Zeiger

WizardFiler This nice file requester is an enhanced version of Anders Bjerin's "FileWindow" from disk 337. It is very comfortable and has a nice WB2.0 design. Version 1.01. Source code in C included. Public Domain. Author: Stefan Zeiger. Anders Bjerin

FredFishDisk585

RayDance Demo version of the RayDance raytracer. This is a fully functional version except that it requires clicking on a continuation prompt after every 15 minutes of rendering time and the total number of polygons and spheres in a scene is limited to approximately 1400. Includes both software and hardware floating point versions. Requires a minimum of 1 Mb of ram. Version 1.0, binary only. Author: Charles Comstock

FredFishDisk586

AzMake A work environment for Aztec C. You can compile, assemble, link, print, etc your programs by clicking a gadget. Typing in the Shell is out. Version 1.1, shareware, binary only. Author: Christian Friedel

BlackHole A little utility that acts like a "super-trashcan" and adds an appicon to the Workbench backdrop window. As such, BlackHole requires AmigaDOS 2.0. You can drag file or drawer icons onto the BlackHole and you will then be asked if you really want to delete the items. Version 1.0, binary only. Author: Parsec Soft Systems

Contour4D Creates colored, altitude mapped objects for Sculpt 4D. Two IFF brushes are used; one to supply the color for the object and a second which, by its color intensity, gives an altitude for the object at that point. Objects are optimised so that large areas of one color and height become a single larger set of faces. Objects are output in Sculpt '.scene' format. Works with ordinary, HAM or Extra-Halfbrite brushes. Any palette colors can be omitted from conversion and all palette colors can be of different textures. Full Intuition interface. Version 1.5, shareware, binary only. Author: Bruce Thomson

LSlabel A simple label printing utility. Very powerful as the user can/must do a lot of settings by himself. Features include variable line feeds (in 1/216 inch steps) between 21 independant lines and freely configurable printer codes. Version 1.1.2, an update to version 1.0 on disk 478, binary only. Author: Stefan Berendes

Opus8 A program to convert Macintosh 8-bit sounds to Amiga 8SVX format. Includes source in PCQ Pascal. Author: John A. Safranek

TheGallows A hangman type game with over 3000 words. The objective of the game is to fill in the blanks and guess the word before the prisoner is hung, after the seventh miss. New words can be added to the list of words to guess, up to a maximum of over 9450 words. Version 1.0, shareware, binary only. Author: Joe Rattz, Jr.

Tree4D Creates 3D branching trees for Sculpt 4D complete with leaves. Many aspects of the shape and design of the trees are modifiable, including color and detail level. Objects are output in Sculpt '.scene' format. Full Intuition interface. This is version 1.5, shareware, binary only. Author: Bruce Thomson

FredFishDisk587

ConLib A run time reentrant library, developed with the purpose of making life easier for application programmers. It contains functions to format and display text, accept keys/messages, strings, or numbers, and to handle cursor and screen control, among other things. Version 2.00, includes source in asm. Author: Bjorn Reese

GMC A console handler with command line editing and function key support. GMC provides extended command line editing, function key assignment in four levels, extended command line history, online help for functions in the handler, and an iconify function. Also includes an output buffer (dump to printer and window), filename completer, script function, undo function, prompt beeper, path name in window title, close gadget for KS 2.0, etc. Version 9.11, an update to V9.8 on FF434, with some new features and some bug fixes. Shareware, binary only. By Goetz Mueller

TMKBP The Multi-Kickstart Board Project lets you build a Kickstart ROM switcher compatible with the Amiga 500 and Amiga 2000. It will hold up to 3 versions of Kickstart, and can be switched between via an external switch. If software does not work under kickstart 2.0, simply flip the switch and reboot under 1.3. It includes full step-by-step documentation, as well as schematics, and diagrams. This is version 3.1. Author: Neil Coito and Michael Cianflone

FredFishDisk588

FifoLib FIFO: is like PIPE: but is based on fifo.library rather than its own implementation. Fifo.library is a general fifo library implementation that supports named fifos, writing to a fifo from a hardware exception, multiple readers on a fifo with each getting the same data stream, efficient reading, and automatic or manual flow control. Programs that require non-blocking IO can access one side of a FIFO: connection via the fifo.library instead of the FIFO: device. Version 3.4, an update to version 3.1 on disk 519. Includes some source. Author: Matt Dillon

FracBlank A commodities screen blanker written for AmigaOS release 2.x. When running will blank the screen and start to draw real plane fractals such as described in the September 1986 issue of Scientific American. The resulting images may remind you of spiders' webs, lace or even the Chladnian patterns formed by grains of sand strewn across a vibrating surface. This is version 1.8, an update to version 1.4 on FF535, and includes numerous bug fixes and enhancements (such as multicolor mode). Includes source in 'C' and assembly language. Author: Olaf 'Olsen' Barthel

MandelSquare Yet another program to generate images from the Mandelbrot set, different from most implementations in that it runs only under AmigaOS 2.x, requires an '020/'030/'040 CPU and a numerical coprocessor. The calculation routines were written in '881 assembly language for maximum speed and precision. Also included is a "movie mode" which allows generation of long camera zooms to spots in the Mandelbrot set. The resulting animations can be saved in ANIM-opt-5 format, allowing to replay them using 'MandelSquare' or standard animation software. Version 1.3, includes source in 'C' and assembly language. Author: Olaf 'Olsen' Barthel

FredFishDisk589

Term A giftware telecommunications program written for AmigaOS release 2.x (Kickstart 37.175 and Workbench 37.67 or higher required). Features include total configurability, full ARexx control, Xpr-transfer support, filetype-identification after download, cut & paste/point-and-click on screen, auto upload and download, scrollable review buffer of unlimited size, solid and fully-featured VT100/VT220/ANSI emulation, optional fast atomic terminal emulation, hotkey support, powerful phonebook and dialing functions, ability to save and print the contents of the screen as IFF-ILBM or ASCII file, full overscan and screen resolution support (new ECS screen modes included), asynchronous operation and a lot more. Comes with seven Xpr-transfer libraries (ascii, jmodem, kermit, quickb, xmodem, ymodem & zmodem) and documentation both in German and in English. This is version 1.9c, an update to version 1.8 a on disk 534. Includes full source in 'C' and assembly language. Author: Olaf 'Olsen' Barthel

FredFishDisk590

Crystals A computer simulation of three-dimensional crystal lattices which permit you to observe stereoscopic views of any of the fourteen Bravais lattices with a variety of orientations, while rotating and positioning them in real time. The frame rate is between 10 and 30 frames per second, depending upon the options selected and the Amiga being used. It is primarily intended for educators and students in physics, chemistry, and geology. It is most suitable for use in conjunction with a course in solid state physics, or a course in crystallography. Version 2.15, shareware, binary only. Author: David McKinstry

EquiLog A Master-Mind type game. Version 1.36, binary only. Author: Pierre-Louis Mangeard

MICE My Image Code Editor. MICE generates source code from standard IFF pictures. Can generate either assembly or C source. V1.2, binary only. Author: Pierre-Louis Mangeard

Seeker A 'find file' type utility for AmigaDOS 2.0 with more features than most such programs. Intuition interface supports AmigaDOS and unix-like wildcards. Several operations can be performed on found files. Version 1.2, shareware, binary only. Author: Donald Lloyd

SuperDuper A very fast disk copier and formatter. Can make up to four unverified copies from a ram buffer in 36 seconds. Verified copies from a ram buffer take 67 seconds for one destination drive, plus 34 seconds for each additional destination. This is version 2.01, an update to version 2.0 on disk 561. Now includes a program to fine tune some fields in the trackdisk device, and a "noclick" type program. Binary only. Author: Sebastiano Vigna

To Be Continued.....

In Conclusion

To the best of our knowledge, the materials in this library are freely distributable. This means they were either publicly posted and placed in the public domain by their authors, or they have restrictions published in their files to which we have adhered. If you become aware of any violation of the authors' wishes, please contact us by mail.

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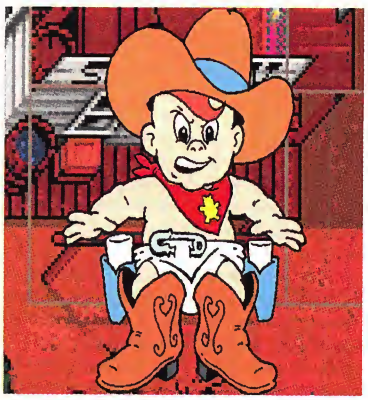
And furthermore...

Nickelodeon's Nick Arcade

A super new game-show produced with the help of the Amiga.

by Jeff Gamble



Video game mascot Mikey.

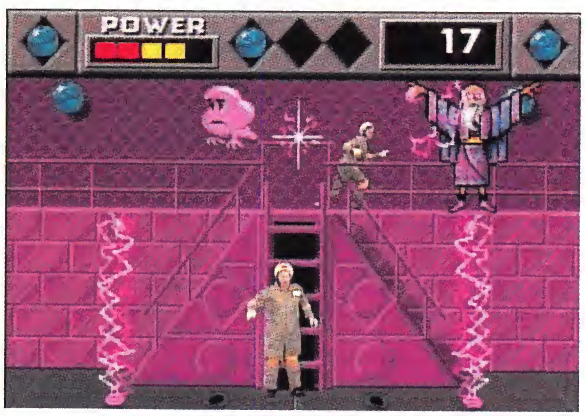
"Nick Arcade" is the hottest new kid's game show from Nickelodeon. The premise is simple: Out-smart and outplay your opponent through two fast-paced levels of competition to win a chance at the bonus round. But there's a twist: You compete using the latest video games and computer technology and to win in the bonus round, you must go inside an actual video game!

Two teams of two players compete through the two rounds of play, moving "Mikey," the video game mascot from square to square on a giant animated game board. The squares conceal challenges including the "Arcade" challenge where contestants test their skills on consumer video games for extra points and continued control of the video wall. The team with the highest points moves on to the Interactive Bonus Round where they enter an actual video game and fight off obstacles to score points and win prizes.

So what makes this show really unique? It was produced and is played with the help of Amigas.

Nick Arcade was created and produced for Nickelodeon by James Bethea and Karim Miteff, both of whom have done previous work for Nickelodeon and are long-time Amiga users. Creation of the video games, interactive environments, many of the sound effects, as well as titling and many of the video effects were done with a group of beefed-up Amigas, including a couple of CDTV units! The show's creators used seven Amigas—five A3000s and two A2000s—and two CDTV units.

The A3000s average 2MB of chip RAM, 10MB memory and run at 25MHz. The A3000s were used for most of the work. Sound effects were MIDI-generated using a MIDI set-up and a 3000. Two of the 3000s were used together to create the zoom-in views for higher quality graphics and resolution, and to ensure extremely smooth scrolling. Several of the units were used together in the large interactive animated game board to produce multiple layers of screens, again to ensure smooth scrolling and to increase the number of available colors. The Amiga 2000s have a special job and perform over and above the call of duty. They are attached to an Ultimatte and produce the giant interactive games for the bonus round. The A2000/Ultimatte combinations take full advantage of the Mandala Virtual Reality Software to create a video game environment where contestants "enter" the games and play them. The CDTV units are used only for the scoring system right now, but the production staff is looking into other possible uses of the units, taking advantage of the latest developments in CDTV software and add-ons.



Other items used with the Amigas include GVP's IV24 board and All In One board and the SuperGen Genlock. Some experimenting has been done with the Video Toaster, but it is not currently being used in show production.

Mr. Miteff said that Nickelodeon has grown to respect the Amiga as a professional video tool. The production team of Karim Miteff and James Bethea had looked at other platforms before deciding to stick with the Amiga. They found the Amiga produced the best quality and look without compromise. They were also very impressed with Commodore's CommodoreExpress Gold Service. They mentioned that they had no problem getting down machines repaired, no matter what the problem, in very little time.

The only portion of the show not produced at this time with the Amiga is the Video Challenge. This is presently made up of commercially available video games. Simply, it was easier to use the existing setups and the commercial games better fit the criteria of the game show. There is hope, however, that future seasons of Nick Arcade will see some popular Amiga titles played during this round of play.

Karim Miteff and James Bethea both have strong backgrounds in the use of the Amiga and apparently have succeeded in turning much of Nickelodeon's production and engineering staffs into Amiga fans. In fact, they were able to get the Nickelodeon Production Department to become Amiga Developers. Mr. Bethea has a strong background in children's television as well, having once worked with the Children's Television Workshop. The pair stresses that the main focus of their work was to create an entertaining game show and turn today's youth on to computers. As Mr. Miteff said, "These kids will be producing the Nick Arcades of the future." The show's prizes often include Amiga 500s and Macintosh Classic's. One thing is for certain, the show, its prizes, creators, and their bank of Amigas will have a definite impact on the way today's kids look at computers and television.

•AC•

Right and Above right: Two of the interactive video games created with the Mandala Virtual Reality software.

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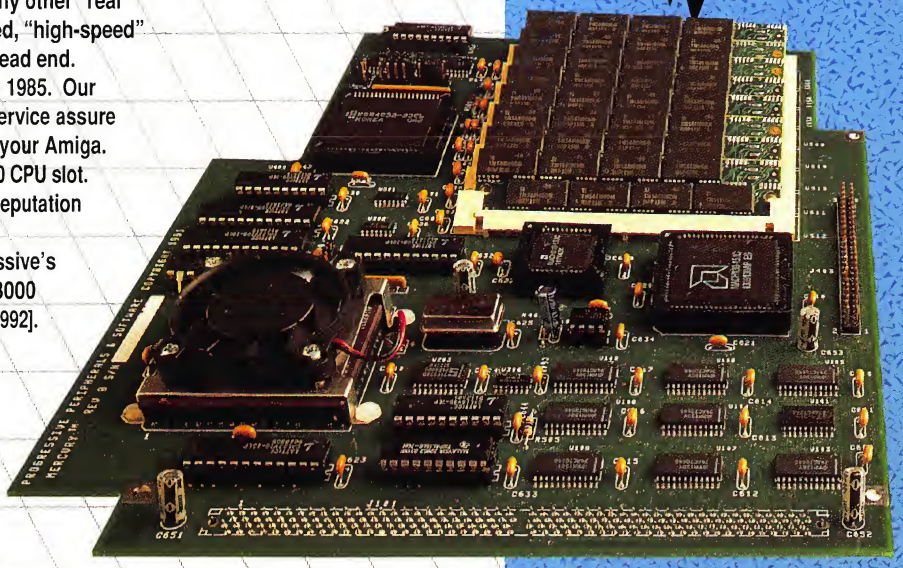

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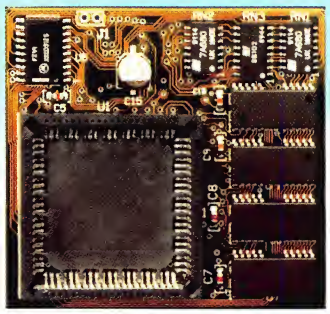
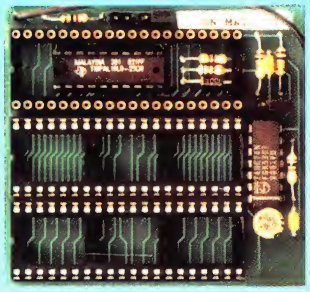


MultiStart II™ A500 & A2000



Allows A500 and A2000 owners to install Kickstart V2.0 and V1.3 ROMs and switch between them with the keyboard. Can also install a third ROM. Lets you stay compatible with your software. No external wires or switches required. Will not fit in the A500 revision 6A.

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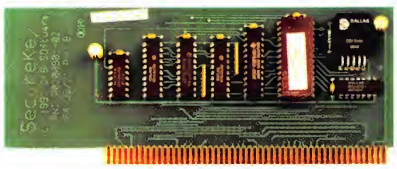

Do you need to keep your system safe from unauthorized use? Want to make sure that no one can delete files from your hard drive or steal your work? Then you need the SecureKey, a hardware security device that installs in any A2000 or A3000. The SecureKey allows you to have one access code for your Amiga. The SecureKey will not allow access to your Amiga without the right security code, period. You can't boot off of a floppy or bypass it in any manner. This means that if yout system has files such as animations, documents, presentations, C code, or any type of confidential information, you can be assured that the files on your hard drive are safe. Keep your Amiga safe from those that may otherwise unknowingly destroy your information. Requires Kiskstart V1.3 or above. The SecureKey is fully compatible with Kickstart V2.0.

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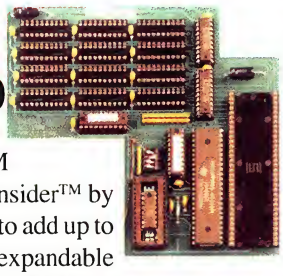
1.5 Meg in the A1000



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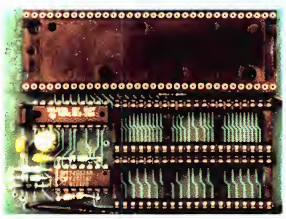

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